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ENVIRONMENTAL ADAPTATION PATTERNS IN THE HUNGARIAN PUBLIC RETAIL DRUG SUPPLY

TESTING THE APPLICABILITY
OF MILES AND SNOW'S STRATEGIC TYPOLOGY
IN REGULATED INDUSTRIAL SETTING

Doctoral School of Management
and Business Administration

Doctoral dissertation

Adam Csepeti:

Environmental Adaptation Patterns in the Hungarian Public Retail Drug Supply – Testing the Applicability of Miles and Snow's Strategic Typology in Regulated Industrial Setting

to Ph.D. dissertation

Supervisor:

András Bauer, CSc
professor

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Department of Marketing

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1. Research summary

Adaptation to changing environmental conditions plays a decisive role in the life of organisations. In the academic discipline of strategic management it is generally accepted by most researchers that during the period of economic turbulence and intensifying competition the tool kit of conventional managerial intuition and empirical wisdom becomes significantly useless (Barney, 1986). As a corollary, by lacking a theoretically well-grounded, then successfully implemented strategy, the prosperity of businesses is going to be severely hampered. To achieve their long term effectiveness as well as efficiency objectives, firms increasingly need to develop consistent patterns of adaptive behaviour.

Our doctoral dissertation deals with one of the most prominent strategic taxonomies of business economics, the classification that has been developed by Raymond Miles and Charles Snow (1978). Our empirical research considered explicitly testing the Miles and Snow (M&S) typology as a priority within a special industrial context – the Hungarian Public Retail Drug Supply (HPRDS) – severely restricted by state regulations and featured by the unique manifestation of microeconomic characteristics of public, as well as private goods.

We tried to do our best to eliminate the scientific-theoretical and methodological shortcomings of past studies. Therefore we employed various techniques for the identification of strategic orientations, our research focus was aimed at micro enterprises that are often neglected in strategic management, and our analyses also included firms pursuing inconsistent, Reactor strategic orientation. Moreover, we highlighted those aspects of Miles and Snow's typology that have not been given much attention in international research so far (e.g. the relationship between strategic orientation and the perceived uncertainties regarding the development of the conditions and the behaviour of key stakeholders of the operational environment characterised by strict governmental regulations, as well as the identification of „hybrid"/"mix" strategic adaptation patterns).

The literature review of theoretical constructs such as Miles and Snow's environmental adaptation taxonomy, business performance, perceived environmental uncertainty and geographical location contributed to the elaboration of the conceptual model of our doctoral research. The more than 30 preliminary in-depth interviews conducted with representatives of a wide range of industrial stakeholder groups (e.g. pharmacists, wholesalers, producers, pharmacy visiting agents, advocacies of pharamacists', National Health Insurance Fund of Hungary officials, physicians) from the drug supply chain were essential in the finalisation of measurement instruments suitable for the operationalisation of constructs examined in the empirical data collection.

During the quantitative section of our empirical research, data collection has been delivered by survey inquiry with the support of the president of the Hungarian Chamber of Pharmacists (HCP) and its regional leaders. The census-like data collection was organised in the city of Budapest, moreover in Baranya, Borsod-Abaúj-Zemplén, Pest and Vas counties. Questionnaires were distributed by post to more than 900 pharmacy managers. After reminder mails and telephone calls, all in all 207 completed questionnaires – featured by high quality data, thus applicable in multivariate analysis – have been returned, which means a 22% response rate.

The quantitative stage of our empirical examination directed towards the exploration of (in)consistent behavioural patterns observable in the environmental adaptation process of

domestic pharmacies. In our research questions we aimed to learn more about how many of the original SOs of M&S and in what form they are observable in the HPRDS which is characterised by bureaucratic coordination mechanisms and limited competitive intensity. We identified SOs pursued by pharmacies by the application of numerous measurement tools, thus by comparing their classification results we could draw valid and reliable conclusions about the relative distribution of Prospector, Analyser, Defender and Reactor pharmacies.

In our dissertation we have also examined the manifestation of interactions between strategy and environment. By using various methods we quantified the influence of perceived environmental uncertainty by pharmacists on the choice and development of strategic orientations pursued by pharmacies, as well as the effect of the consciously chosen strategic orientation by pharmacists on the perception of changes in external environmental conditions and key industrial stakeholders' behaviour.

Beside the sector-specific manifestation of Miles and Snow's strategic orientations, in the second stage of our survey data collection we paid special attention to examine the business performance of Prospector, Analyser, Defender and Reactor pharmacies. Our hypotheses placed great emphasis on identifying factors – such as perceived environmental uncertainty by pharmacists and geographical location of pharmacies – potentially playing moderating role in the stochastic relationship between strategic orientations and business performance. By the application of various mathematical-statistical methods we examined the potential moderating effect of perceived environmental uncertainty by pharmacists and geographical location of pharmacies on the relationship between strategic orientations and sales/net profit.

According to our experiences, all of the 4 original strategic orientations of M&S can not be observed in the Hungarian public retail drug supply. The behavioural characteristics of Defenders and Reactors seem to have mixed to a great extent, thus, besides „pure" Prospector and Analyser adaptation patterns, we identified a Defender/Reactor „mix" strategic orientation. The convergent validity between the results of various measurement instruments identifying strategic orientations, has been confirmed even in its classical approach in case of operationalising the 3 „sector-relevant" behavioural patterns.

As per observations, in the Hungarian public retail drug supply the relative majority of pharmacies pursue the Defender/Reactor strategic orientation, showing inconsistent adaptation behaviour and exhibiting suboptimal business performance. They are followed by Analysers, and then come Prospectors. By applying various multivariate methodologies we highlighted that the effect of strategic orientation consciously chosen by pharmacists on the extent of perceived environmental uncertainty proved to be stronger than the determining influence of environmental conditions on the choice and realisation of strategic orientation.

Our results show that although Miles and Snow's strategic orientations had a significant contribution to the development of pharmacy sales, they did not influence net profit significantly. The sales of Prospector pharmacies exceeded the sales of Analysers and that of the Defender/Reactors, while at the same we did not experience significant differences in the profitability of strategic orientations. They – depending on the applied methodology and the integration of moderating and control variables – explained 13,1-48% of the variance of market effectiveness and 1-40,7% of financial efficiency.

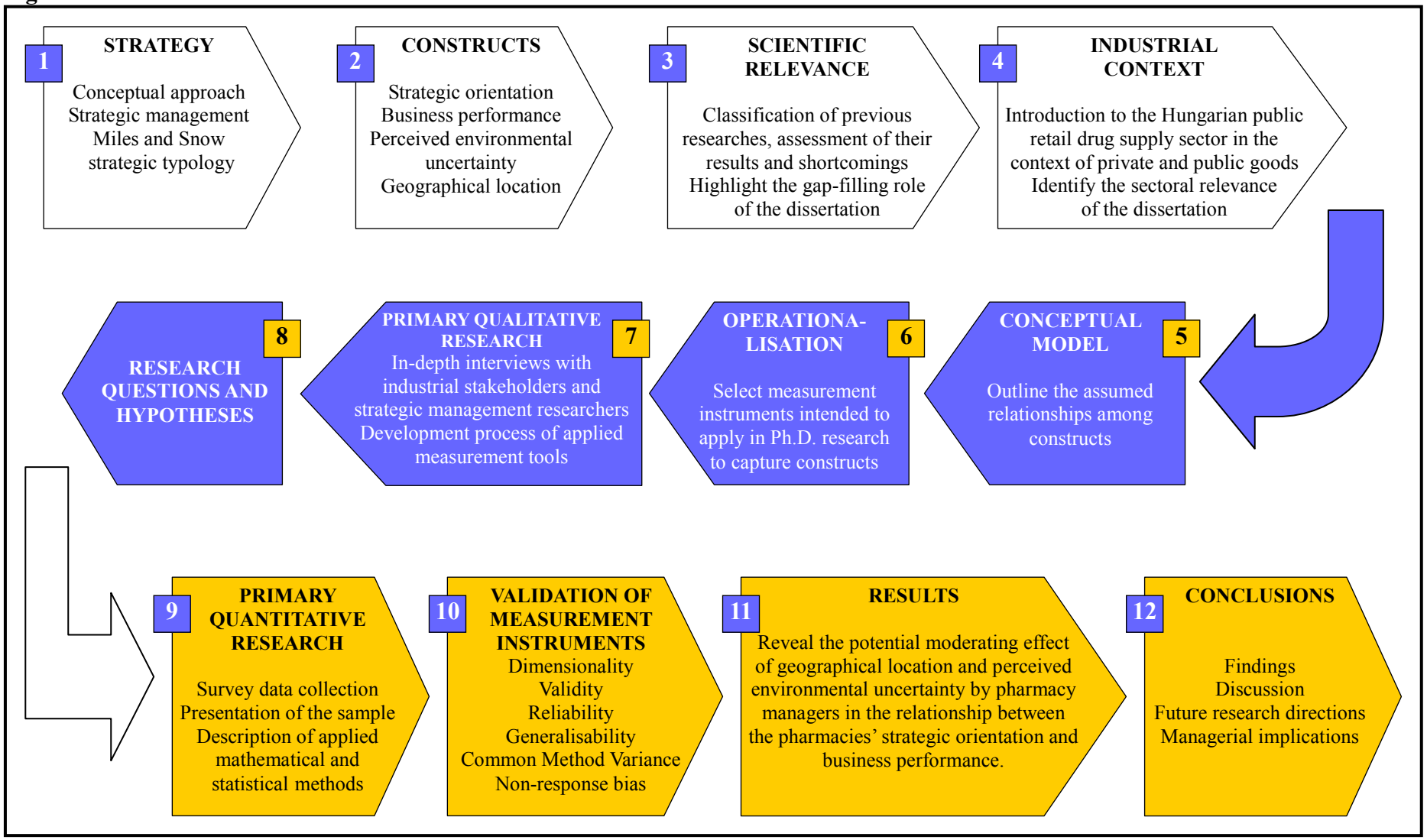
Of perceived environmental uncertainty by pharmacists, we can say that all in all it did not moderate the relationship between strategic orientation and business performance of

pharmacies. While geographical location of pharmacies – depending on the chosen multivariate methodology – did moderate the relationship between Miles and Snow's strategic orientations and business performance. It is discernible, that the effect of the realisation of Prospector, Analyser and Defender/Reactor strategic orientations on business performance strengthens in rural context compared to our experiences in urban environment.

Examining the combined moderating effect of geographical location and perceived environmental uncertainty by pharmacists, we experienced in some cases that changes in perceived environmental uncertainty modify the influence of certain strategic orientations on business performance in urban and/or rural context. As an example, the negative effects of numerous strategic orientations on business performance strengthen if the degree of perceived environmental uncertainty by pharmacists falls back. In our dissertation the revealed interrelations between strategic orientations, perceived environmental uncertainty by pharmacists, geographical location and business performance of pharmacies remained more or less robust even after controlling for the effects of sector-specific, socio-demographic features and variables pertaining to pharmacies' sites.

The results of the dissertation end with the structured summary of the combined potential moderating effects of perceived environmental uncertainty and geographical location on the relationship between strategic orientation and business performance by means of various multivariate methodological techniques – e.g. hierarchical interaction and multigroup regressions and SEM analyses, like moderated moderation (SEM). The final chapter of the Ph.D. thesis draws its theoretical conclusions, discusses the more exciting and contradictory research findings, emphasises the limitations of our study, formulates future research directions and finally reaches its end with the introduction of managerial implications. The key content elements and milestones of our Ph.D. research are illustrated in Figure I.

Figure I: Flowchart of the framework of the Ph.D. research



Source: Figure made by the author

Due to length limits and in order to avoid monotonity accidentally experienced while reading, the crucial and repeatedly used scientific-, industrial and business policy constructs and basic concepts of the dissertation have been abbreviated. Table I. below lists the acronyms for the most frequently used basic concepts.

Table I: Guide to the abbreviations of the doctoral dissertation

Abbreviation	Original expression
M&S	(Raymond) Miles és (Charles) Snow
SO	Strategic Orientation
PROSPECTOR, PRO, P, K	Prospector strategic orientation
DEFENDER, DEF, D, V	Defender strategic orientation
ANALYSER, ANA, A, E	Analyser strategic orientation
REACTOR, REA, R, R	Reactor strategic orientation
PEU	Perceived Environmental Uncertainty
PEU_WHS	Perceived Environmental Uncertainty in the behaviour of Wholesalers
PEU_PROD	Perceived Environmental Uncertainty in the behaviour of Producers
PEU_PAT	Perceived Environmental Uncertainty in the behaviour Patients
PEU_COMP	Perceived Environmental Uncertainty in the behaviour of Competitor pharmacies
PEU_REG	Perceived Environmental Uncertainty in the behaviour Regulatory authorities
PEU_HCP	Perceived Environmental Uncertainty in the behaviour of the Hungarian Chamber of Pharmacists
PEU_FIN	Perceived Environmental Uncertainty in the development of Financial conditions
GL	Geographical Location
BP	Business Performance
SAL	Sales
NP	Net Profit
SEM	Structural Equation Modeling
CMV	Common Method Variance: variance (distortion) resulting from the application of the common method
CSLF	Common Single Latent Factor method for testing CMV
SBU	Strategic Business Unit
HPRDS	Hungarian public retail drug supply
HCP	Hungarian Chamber of Pharmacists - *Magyar Gyógyszerészi Kamara (MGYK)*
NHIFH	National Health Insurance Fund of Hungary - *Országos Egészségbiztosítási Pénztár (OEP)*
NIP	National Institute of Pharmaceutics -*Országos Gyógyszerészeti Intézet (OGYI*) (From 2011 onwards the National Institute for Quality- and Organisational Development in Healthcare and Medicines) – *Gyógyszerészeti és Egészségügyi Minőség- és Szervezetfejlesztési Intézet (GYEMSZI)*
NPHMOS	National Public Health and Medical Offer Service – *Állami Népegészségügyi és Tisztiorvosi Szolgálat (ÁNTSZ)*
HCSO	Hungarian Central Statistical Office (KSH) – Központi Statisztikai Hivatal
ADD	Act of drug distribution - *Gyógyszer-forgalmazási törvény(GYFTV)*

Source: Table made by the author

2. Introduction

„Statesmen and generals have at all times endeavoured to avoid the decisive battle. Contemporary history has destroyed this illusion” – Carl von Clausewitz

Prominent Prussian military general of the Napoleonic Wars and later statesman *Carl von Clausewitz* was not only an epochal philosopher in military science. The main messages of his works had such a huge influence on representatives of other scientific discplines, including economics as well, that circa 150 years later prestigious universities would be quite quick in the successful integration of his doctrines. His works *On War or „Strategische Beleuchtung mehrerer Feldzüge von Gustav Adolph, Turenne, Luxemburg und andere historische Materialien zur Strategie"* are now listed among either the obligatory or recommended readings of business strategy, marketing, game theory and other courses of such world-famous business schools as Harvard Business School, London Business School or HEC. Due to students' warm welcome, the military policy implications of Clausewitz's works – for example the critical analysis of the opponent's resources, the power of surprising offensive, the advantages of developing stable defensive positions, or the importance of psychological warfare (Clausewitz, 1832) – has gained ground fast even in the world of business.

The saturation of business-to-business and consumer markets and the intensified competition experienced in the second half of the 20th century demanded a more conscious action on part of the companies. Firms had difficulties in increasing the market potential of their products and services and so were often forced to expand at each others' positions. *In such a competitive environment the political-military analogies of Clausewitz were regarded actual and therefore they became popular devices in business planning and strategic consulting.* (Ghychy et al., 2001). However, Clausewitz's references in many cases *were applied without proper conceptual bases as managers were not aware of the exact definition, or the content- and process elements of strategy.* In our doctoral thesis we analysed in detail the strategic aspects of the intensified competition in HPRDS as a consequece of Act XCVIII of 2006 „on the general regulations of safe and cost-efficient supply and distribution of drugs and medical devices" (Act of Drug Distribution – ADD). In order to do this, it proved to be essential to define strategy as a central theoretical constuct. In the next sections we plan to give a short historical overview of the international and Hungarian scientific approaches of strategy.

3. Approaches of the concept of strategy in scientific literature

3.1. Historical and military scientific roots

Strategy is one of the oldest concepts of human civilisation, the word itself originates from the Greek „strategos" which means general. Ancient Greeks used the term from the 5th century B.C. onwards and *mankind was going to interpret it exclusively in the military field for the following almost 2500 years* (Barakonyi-Lorange, 1993). Another cradle of the development of strategic thought was the ancient China. Not surprisingly, the first written theory of strategy came to light in the „Empire of Heavenly Peace", where general Szun-cu put down his strategic ideas on the political-military state of the country in around 300 B.C. The strategy concepts of later ages emphasised its military semantic content as well. By developing the doctrines of Clausewitz, Helmuth von Moltke, chief of the general staff, establishing the XIX. century Prussian continental military hegemony defined strategy this way: *„Strategy is nothing else, but the employment of common sense in military command."* (Barakonyi, 1999, pg. 18.)

The military-scientific approach still prevails in the definitions of Hungarian and international concise dictionaries even today: „*Strategy is the science and art of conducting a military campaign in its large scale and long term aspects"* (The New Webster's Dictionary, 1993).

According to the Hungarian Révai Encyclopedia *„strategy is all of the commanding activities that aim to lead a mobilised army to confront with the enemy”* (Barakonyi, 1999, pg. 18.).

3.2. The semantic content of strategy in business economics

In the 20th century, the development of technological conditions and the ease of legal criteria promoting the worldwide proliferation of goods and services *led to a dynamic penetration of markets, where competition between companies – just as once in the battlefields – became a question of „life and death”* (Ronda-Pupo – Guerras-Martín, 2012). This provided excellent opportunity for managers to implement the accepted concepts and methods of generalship in management. Parallel to this, strategic philosophy and its employment in solutions to economic problems were taking roots in educational and scientific spheres as well. Hereinafter we summarise the semantic content of strategy and its modern approaches in business policy.

One the most important representatives of the cradle of strategic management, the Harvard-school, is *Kenneth Andrews*. He defined *strategy as a pattern observable in managerial decisions* which contains the objectives and goals, assigns the actions, steps necessary to achieve the goals and defines the scope of product/market domain and operation of the company. Furthermore, strategy specifies the economically and widely interpreted role of the company in society and designates the type, nature of economic and other devices with which it intends to contribute to the welfare of its owners, employees, consumers and other socially affected stakeholders. (Andrews, 1971).

Russian-born pioneer of strategic planning and decision-making, *Igor Ansoff* endowed the approach of strategy with rigorous economic-theoretical bases and mathematical methodology. (Hart, 1994). Compared to Andrews, he had a rather technocratic view and narrowed the domain of strategy, which, according to him, focuses strictly on the *product/market decisions of the company.* Ansoff interprets *strategy as an engineering mechanism* that supports company management and helps in anticipating environmental conditions and bringing decisions concerning the future of the firm (Ansoff, 1957, 1965).

An excellent business philosopher of the „West Coast”, founder of California Management Review, *George A. Steiner* stated that *there is no mutual agreement even among businessmen and academics on the concept and semantic content of strategy.* In his significant work, „Strategic planning” in 1979 he observed that strategy is a complex set of counter reactions to the actual, or future, probable activities of competitors. This also reflects to the age of Steiner that did not wish to conceal the military policy-origins of business strategy at all. In contrast to the abovementioned authors, he did not not take strategy unambiguously, mixing various strategic motives and using numerous definitions and approaches. These are (Steiner, 1979):

1. Strategy is a matter of top management, as its importance is essential in the life of the organisation
2. Strategy refers to the most important policies – namely to objectives and mission of organisational operations
3. Strategy consists of top management decisions that lead the company in the right direction and help to realise company objectives
4. Strategy is the answer to the question regarding what the company should do
5. Strategy determines the desirable final state of the firm and the way to achieve this position

As one can see, Steiner interpreted strategy as a rather heterogeneous concept. Not even in his book titled „Strategic planning" (1979) were the conceptual frames of strategy cleared, so from a scientific point of view, the conceptualisation of strategy as a theoretical construct is incomplete and plastic. Approaches found in the footnotes of his work *regard strategy as a plan, a competitive tool, a task, a perspective and a desirable position.* On the other hand, the most stressed motives of Steiner's strategy definitions are perspective and objectives, that is vision and mission. For years, academics had difficulties in handling Steiner's conceptually quite plastic definitions which disturbed and hampered scientific research to some extent (Nickols, 2010).

The world-famous theorist of management and organisational sciences, *Henry Mintzberg* shares Steiner's opinion, namely that the approach of strategy is very heterogeneous. According to the systematic analysis summarising his observations of many decades, representatives of business economics interpret the expression of strategy in four different ways (Mintzberg, 1994, Ronda-Pupo – Guerras-Martín, 2012):

1. A *plan* concerning „how", that contains the tools with which the company can get from one point to another
2. Strategy is an *enduring behavioural pattern* in the attitude of organisations, which is observable in various business activities
3. Strategy is a *position* which is reflected in the answers to the following questions: what range of products/services is being offered to what market segments compared to competitors
4. A *perspective* that contains the vision and the potential evolutionary tendencies of the firm

Mintzberg's strategy concept – especially its *content and formal* elements and the sharp distinction between *intended and realised strategy* (Mintzberg-Waters, 1985) – is to be discussed in detail in Chapter 4 intoducing the history of the academic discipline of strategic management.

Today's popular strategic management guru, *Michael Porter* interprets strategy exclusively in its competitive context (Porter, 1980). According to him, *any strategy is a competitive strategy that aims to achieve and manage sustainable competitive advantages* (Porter, 1996a). In his works he points out that strategy is an intended and conscious choice of tools so that companies can offer a special value proposition or value-mix to their customers. Besides, strategy is the combination of the final states of companies that managers aim to reach by making various decisions and taking adequate measures (Porter, 1985). Porter's approach therefore embraces strategy as a *plan, perspective* and *position*.

According to *Gary Hamel and C.K. Prahalad,* representatives of the resource and capability-based business theory, strategy to companies means the choice and permanent development of resources that fit the external and internal environmental opportunities and its top priority is the acquisition of competitive advantages (Hamel-Prahalad, 1990). The content and formal elements of strategic process are both greatly stressed in this definition. The resource and competence-based approach gives the interpretation of competitive strategy remarkable dynamics, *since it focuses on „manoeuvering for actions" instead of static battles for positions"* (Stalk et al, 1992) and pays special attention to developing competencies necessary for environmental adaptation (Day, 1994). All in all we can say that the „how"-type normative recommendations concerning the achievement of final positions – *e.g. the plan and perspective motives* – dominate in the works of this stream (Hamel-Prahalad, 1989).

Nevertheless during the past two decades the resource and capability-based view has changed a great deal and besides the more abstract plan and perspective motives, more practical approximations stressing managerial decision-making, behaviour and measures have strengthened again (Hunt-Lambe, 2000, Ramos-Rodriguez – Navarro, 2004). A fine example for this is the definition of Thompson and his colleagues, (the authors of one of the most famous strategy textbook) according to *which strategic management is a process, during which a company sets its objectives and defines those actions with the help of which the objectives can be achieved within a given period of time.* Then performs the actions and continuously evaluates the results (Thompson et al, 2008).

In our days, besides the dominantion of resource-based business theory and various strategic typologies, we may witness the evolution of an „old-new" strategic construct. With sociologists, psychologysts and anthropoligsts more decidedly advancing even in this discipline, *the behavioural approach of strategy* has strengthened and gained a specific focus. (Powell et al., 2011). The representatives of this stream, regard strategy as a resultant of empirical and psychological factors rather than a model-like outcome of rational economic factors (Hodgkinson-Healey, 2011, Levinthal, 2011).

Theorists of this stream getting more and more important positions even at mainstream international strategic journals by interpreting firms as biological entities, and comprehend strategy as a subjective empirical and psychological construct. Latest neurostrategic empirical quests correlate strategy with the subjective emotional and motivational base of managers and implement analogies into business context from medical sciences, especially from diciplines examining cerebral functions. (Powell, 2011, Powell et al., 2011). Implicitly, this stream concentrates on the *plan* and *behavioural pattern* motives of strategy.

3.3. The approaches of strategy in Hungarian scientific literature

In our opinion*, Hungarian management science properly does not take a rigorous position in the conceptual definiton of strategy*. According to our experiences, domestic education and research of strategy are founded primarily on Porter's theoretical frames, respectively on resource, capability and knowledge-based business theories (Porter, 1980, Wernerfelt, 1984, Hamel-Prahalad, 1990, Grant, 1996). According to *Attila Chikán*, doctor of Hungarian Academy of Sciences, *„strategy deals with the overall objectives and the organisational structure of companies including the relationship between certain organisational units and the headquarter"* (Chikán, 2006, pg. 466).

Károly Barakonyi also has a wider interpretation of strategy, although it is doubtless that operational *(behavioural pattern)* and engineering motives *(plan)* seem to dominate in his approaches. According to the economist, „strategy consists of the basic steps managers must take in order to realise objectives" *(action)*. „Strategy is a path to follow towards achieving vision, mission and goals"*(perspective)*. „Strategy includes the tasks and choices that lead to success on a certain level" *(engineering)*. (Barakonyi, 1999, pg. 21.). According to József Vörös, corresponding member of Hungarian Academy of Sciences „Strategy is a set of operations/actions that aims to create a unique, profitable position" Strategy is therefore a goal and a tool at the same time that helps a company get into a desirable future position. All this is achievable through the coordination of interorganisational actions *(behavioural pattern)* and their symbiosis-like interaction. (Vörös, 1995)

According to the well-known representatives of our narrowed field of interest – the Hungarian marketing science – *András Bauer and József Berács,* marketing strategy excels the rest of the functional strategies in significance since its priority is the definition of the product/market domain and competitive tools of the organisation (Day, 1992). The authors explicate in detail that marketing strategy can only be interpreted in a hierarchical structure. As per these, *basic marketing strategy* consists of the setting of the general objectives of the company and the long-term definition of those methods by which, with a proper management of the marketing function, these objectives can be achieved. While „*partial marketing strategy"* comprises of the definition of marketing objectives and the realisation of certain marketing activities (tools)". (Bauer-Berács, 2006, pg. 537-538.).

Hungarian approaches compared to western definitions *are perceptibly less concrete in specifying the concept of business strategy* and try to emphasise objectives, tools, engineering and decision-making, that is to say, motives having the widest semantic content.

3.4. Relevant strategic concepts from the point of view of the doctoral research

Basically, the strategy concept of our doctoral dissertation was greatly influenced by the approaches of two authors. According to *L. Jay Bourgeois*, strategy can be depicted as an essential decision-making which determines the development of the relationship between company and its environment in the interest of reaching the objectives of the organisation. Compared to his academic colleagues, Bourgeois correlates strategy with environment to a greater extent and regards strategy as inseparable from external, operational conditions. In his epoch-making theoretical dissertation he discusses both strategy and environment in a dual-approach (Bourgeois, 1980a). He makes a distinction between the definitions of *primary* and *secondary* strategy and also between *general* and *task-oriented* approaches of environment.

Primary strategy aims at the selection of the product/market and operational domain of the company, while *secondary* strategy refers to the proper choice and employment of competitive tools applicable in a given product category and customer segment. The *general environment* of the company implies the main variables of the macrosphere, whereas *task environment* includes the sectoral- and organisational level system of conditions and participants. According to Bourgeois, due to the dual, hierarchical structures of both strategy and environment, it is very difficult to create a generally interpretable strategic definintion.

Therefore *it is the task of researchers to develop a differentiated approach of strategy and emphasise which aspect of the concept is just to be inspected.* The dual structure of strategy and environment and the interrelationship between them are illustrated in Figure II. In HPRDS examined in our dissertation, as a result of the liberalisation process between 2006 and 2011, such notable changes took place that modified to a great deal all six elements of the theoretical integration observable in Figure II, *therefore Bourgeois's theoretical frame is of extraordinary relevance from the point of view of our Ph.D. dissertation*.

In the literarure review stage of our dissertation, the strategic approach of Donald Hambrick, professor of Columbia University, was of the greatest importance to us. The fact that Hambrick is the most prestigious researcher of M&S's strategic typology, which is the central theoretical construct of our doctoral research, contributed to our choice greatly. According to him, *strategy is a consistent pattern of such important managerial decisions and actions, that 1) guides the company in keeping contact with the external environment 2) influences the internal structure and processes of the firm and 3) decisively affects the development of*

business performance. (Hambrick, 1980). We emphasise that due to the research objectives of our dissertation we consider Hambrick's definition as authoritative. We explain it by stating that the examination of the business performance exhibited by pharmacies pursuing various M&S's SOs appears as priority in the empirical research and the summary of scientific literature of our dissertation as well, just as it does in Hambrick's definition.

3.5. Summarising thoughts on the interpretation of strategy in business economics

As a summary of the introduction concerning the definition of strategy we can make several statements. Business economics adopted strategy as *„terminus technicus"* to incorporate into its theoretical bases from the field of military sciences. The implementation of certain more important theoretical constructs and analogies proved to be fast and successful in the intensive competition and maneuverings for positions between companies. Definitions outline 4 frequently recurring motives in the approach of strategy. According to these strategy can be interpreted as a *perspective, a plan, a position, or a certain behavioural pattern.* These four approximations can be found in all of the definitions, yet one or the other is more stressed in turn (Ramos-Rodriguez – Navarro, 2004).

It sounds a bit more sophisticated if we interpret startegy *as a complex net of thoughts, ideas, inspections, experiences, objectives, expertise, perceptions and managerial expectations* which serves as a guidance for the top management regarding what choices to be made in order to achieve the objectives of the company (Nickols, 2012). The semantic content of strategy contains both the achievable objectives of firms and the ways to achieve these objectives, yet in our opinion, the definitions of academics discussed put greater emphasis on the *„how"*, that is, the ways of achievement and the applicable competitive tools.

According to the definitions we can say that strategy can be interpreted as a four-element structure. *The first* element refers to the set objectives, or the achievable final states. *The second* level contains a plan that assigns what resources a company must mobilise in order to fulfil the set objectives. *The third* element of strategy has a tactical implication as well, as it focuses on the capabilities of the company, which are the ways of applying these resources and competitive tools, while *the fourth* pillar is a detailed analysis of the assigned resources and capabilities. This way we might say that strategy and its related tactical programs serve as a *bridge between company objectives and tools.* Figure II. borrowed from Bourgeois finely illustrates the relationship between these four components. After the introduction and conceptual clarification of the rich semantic content of strategy, we can direct our attention towards the short historical overview of the strategic management discipline.

4. Introducing strategic management

4.1. A modern academic discipline

Strategic management, as an academic discipline, is a young branch of science. Its research domain embraces the strategic behaviour of organisations, *„i.e. the practice of business management based on the integrated unity of strategy-making, realisation and feedbacks"* (Chikán, 2006, pg. 483.). The implementation of military-scientific results in the civilian sector led to the permeation of the conceptual kit of strategy in economics after the Second World War. Nevertheless the new management science could not have itself accepted in the academic sphere. The reason for that was the discipline did not have theoretical roots related to economics. The conceptual frames and methodological instruments, upon which it could

have based its consequences, were not ready. Therefore strategic management borrowed its theoretical foundations by alloying three important fields of economics. These were 1) *business policy* 2) *industrial organisation* and 3) *organisational behaviour*.

Scientific research got under way in the 50's and 60's, due to the works of Ansoff (1957, 1965) and Chandler (1962), and the achievements of the scholars of the Harvard Business School (Andrews, Quinn, Christensen, Guth). The publications of *descriptive (positive) approach* relied on the experiences of case studies above all and focused on company growth, diversification and the necessary organisational reconfigurations (e.g. structure). The 70's may be regarded as the most fertile period of strategic literature. During these years emerged those models and procedures (BCG portfolio-matrix, SWOT analysis, scenarios, etc.) that are often used even in today's business consulting and that may be characterised with *a normative profile* chiefly, which were interpreted as a recipe for success by both researchers and managers alike (Tari, 1995). The „vogue" of normative school was later forced back and gave way gradually to exploratory and synthetising theoretical studies as well as scientific researches applying mainstream mathematical-statistical toolkit.

4.2. What does strategic management deal with?

Objects of strategic researches basically fall under two groups (Miller, 1989, Chakravarthy, 1992). One stream of the scientific works examine the *content and types of business strategies*. It seeks to answer questions like these: What factors determine strategy? What competitive tools are used by companies following various strategies? How does the relationship develop between strategy and structure? What effect does strategy have on BP? etc. The other stream of academic inquiries treats *strategy as a process and* concentrates on its specific characteristics. The constructs of strategy-making (engineering), implementation, execution and control (feedback) are in the focus of its interest. Researchers of this stream are engaged in learning more about the followings: Who takes part in the engineering process? What techniques do they use in position or situation analyses? Do external consultants take part in the engineering process? Who are responsible for the realisation of strategy? According to which criteria do they monitor the implementation of strategy? etc. (Langley, 1988, Hart, 1994, Antal-Mokos et al., 1992).

In the early stages of strategic management literature, researchers – due to the relatively predictable environmental conditions – focused on the procedural characteristics of strategy, decisively on the process of strategic planning. Following the crude oil price crises of the 70's – although the importance of engineering still remained – in the 80's the industrial and company-, and entrepreneurial-level *examinations aiming at the realisation and monitoring of strategies took a greater role.* Parallel to this, the research stream striving to explore the content elements of strategies in detail also settled. The two trends were not isolated from each other and did not operate separately of course, as there is a great number of studies in scientific literature that connect the content and formal aspects of strategies (e.g. to what extent do certain planning and engineering approaches result in business strategies with different contents, what effects does the fit of applied position/situation analysing techniques and chosen competitive tools have on BP etc. Mintzberg, 1973, 1978, Buzzell-Gale, 1987).

4.3. Research philosophies in strategic management

According to prominent Hungarian strategy researcher, Zoltán Antal Mokos (1993) in the periods of strategic management literature a conflict between two, in many ways quite diverse

scientific approaches can be observed. Researches willing to meet the requirements of the *rigorous* expectations of „scientification" (validity, reliability and generalisability) employing *quantitative methodological techniques* on a high level, search for the relationships between the variables defined and operationalised within the internal/external environment of companies. Contrarily, the interpretative school applying *qualitative research tools* puts the emphasis on answering relevant, more „down-to-earth" and practical questions managers are concerned with. (Antal-Mokos, 1990). The disctinction experienced in the scientific approach of strategy may still be regarded as sharp. Even leading scientific journals of strategic management can be separated in that either empirical researches employing *rigorous quantitative methodologies* (e.g. Strategic Management Journal, Journal of Marketing)*, or interpretative,* „case study"–type publications dominate their pages (e.g. Academy of Management Review, Academy of Management Journal, Administrative Science Quarterly).

Of course, among strategic researches we could identify countless other philosophies or fracture lines, yet, by all means, at least one of them is worth mentioning. Academic examinations sharply stand apart by their interpretations of strategy and especially of the process elements (e.g. strategic planning) of strategy. *As per sources of scientific literature, the content developed as a result of strategy-making and planning can be discussed from three stand-points:* (Langley, 1988, Schwenk, 1988 in. Balaton, 1994):

1. Strategy, as a result of rational decision-making process
2. Strategy, as a product of organisational processes
3. Strategy, as a function of the political-power relations of the organisation

Naturally, the rigorous economic approach strives to describe *strategy as a result of a rational decision-making process,* while the interpretative school (mostly consisting of representatives of organisational behaviour) besides considering these factors, *regards the organisational theory and management attributes and often – concerning the interests of certain special organisational stakeholders – the political aspects of strategy as priority* (Cyert-March, 1963). Nevertheless, the above classification is for analytic purposes only, in business practice all three approaches are simultaneously present, with the domination of one or the other. (Antal-Mokos et al, 1992).

As we already stressed in the previous chapter of our dissertation, the research orientation directed towards the search for optimal *„one best way" type decisions – based on the rational assessment of production factors, resources and capabilities as well as environmental conditions – was forced back in the 2000's.* Authors mention three reasons for that (Powell et al, 2011). First, strategic management did not keep pace with the development of behavioural theories. Secondly, the theories of strategic management psychologically were not properly grounded. *Finally, it was time to unite the disciplines of psychology and strategic management.* (Hodgkinson-Healey, 2011). Still, the revival of behavioural approach did not necessarily result in the overshadowing of rigorous mathematical-statistical research: as a matter of fact, in many cases, the quantitative operationalisation of 40-50 years-old organisation-sociological and -psychological constructs may be regarded as one of the main characteristics of the new behavorist paradigm. (Levinthal, 2011).

In spite of the abovementioned, the new behavioural scientific approach greatly eased the attitude of managerial decision-making that relied on mathematical-statistical modeling, based on the examination of a limited number of factors and which was theretofore dominant in strategic management. According to Levinthal (2011) *we must accept that a theoretically*

modelable optimal decision does not exist, since those model only a small part of the world („small world solution") and that they ignore numerous existing practical factors. The latter phenomenon can be observed in the publications of Bromiley (2010) and Bromiley-Rau (2014) as well. Based on the Prospect Theory of Tversky and Kahnemann (1979), their researches examine more factors and employ less mathematical formulas.

4.4. The treatment of fracture lines

Fracture lines observable in the discipline are reflected in academic studies as well, since the preferred approaches of strategic research to which they pay more attention *are usually determined by the professional background and scientific objectives of authors.* The resolution of fracture lines is by no means impossible though. In order to meet requirements of theoretical and methodological grounding as well as of promoting practical decision-making, academics need to be more sophisticated in approaching the concept of strategy as a unit of analysis. In international forums Henry Mintzberg (1978), in Hungarian literature Zoltán Antal-Mokos (1993) made successful efforts to do so, as illustrated in Table II.

According to the table prior to examinations researchers have to clearly define the way they regard strategy, outline the objective and target audience of their research and that exactly which of Mintzberg's strategic concept they consider to be the object of their empirical examination. *Intended strategy* implies the future strategic notions and plans of managers, while *realised strategy* is the actually exhibited behavioural patterns often different from ideas due to changing environmental conditions (Mintzberg-Waters, 1985). Content and formal aspects of both strategic concepts may be examined, the emphasis in the cases of all four cells of the matrix is put on whether academics are able to find the methodology fitting best the given strategic field and whether they are able to give reasons for the assumed relationship between process and content variables of intended and realised strategy, as well as what role rational and organisational-political determinants of the examined strategic constructs play.

Antal-Mokos argues the conceptual and methodological universality of strategic researches and considers *the effort to develop a unified-shallow adequation sytem of criteria futile, what is more expressly impractical* (Antal-Mokos, 1993, pg. 104.). According to him, strategic literature has developed in a positive direction and after the millenium it is approaching the period of maturity. It has been outlined in the variety of academic works and the clear-cut definitions of specific objectives, examined constructs and applied methodological tools. The positive issue that academics often perform more significant research with the help of practicioners also supported this view. *The involvement of managers in defining problems, constructing theories as well as in planning and executing research methodology greatly eased the conflicts between different research philosophies.*

As a result of the aforementioned, examinations directed towards the content and formal elements of strategy focused attention on the experimental knowledge, emotions, motivations, cognitions and subjective perceptions of external and internal environment etc. of managers (Ireland et al., 1987, Doty et al., 2006, Tsai-Huang, 2008). Bromiley and Rau (2014) *suggest that the prevailing resources and capabilities-based paradigm (Resource Based View) should be replaced with a Practice Based View* in which the experiences and skills of managers constitute the sustainable sources of competitive advantages and affect BP.

The *reflexivity and triangulation* between the attitudes and interests of various stakeholder groups of strategic research greatly helped academics come up with real alternatives for

managers instead of fabricating perfect methodological works for their own micro-spheres (Van de Ven, 2007). This practice made it possible for internationally acclaimed researchers to be able to choose which interpretations and stressed aspects of the concept of strategy they should use in various circumstances of time, target audience, etc. *Although researchers retained fracture lines, but by emphasising relationships between studies focusing on special strategic fields, they acquired significant synergy and „scientific fertility".*

5. Introduction of the positioning school

5.1. A short introduction of the research stream

During the planning of our Ph.D. dissertation we decidedly relied on the conceptual basis of one of the most important stream of strategic management which is called *positional school.* Contrary to the stategy-making process, *this trend treats the exploration of the content elements of business strategies as priority.* In positional school, strategy is centered around so called heuristics, or procedures during which instead of exclusively applying rigorous mathematical-statistical methods, researchers starting from their premises draw their conclusions by experimental and logical arguments (Ronda-Pupo – Geurras Martín, 2012).

Positioning school pays special attention in its consequences to *managerial implications*, that is, *it formulates normative recommendations* regarding company structure, competitive tools, administrative processes and further organisational factors that influence BP (Hortoványi et al, 2006). In the school Mintzberg distinguishes four main research streams which are illustrated in Table III (Mintzberg et al, 2005).

In the case of positioning school we can observe the blending of intended and realised strategy in the semantic content and conceptual approach of strategy, although empirical researches so far have stressed the necessity and the manner of developing strategies *(intended)* in order to achieve outstanding BP, instead of describing the ways strategies develop *(realised).* In our research we dealt with the questions which are contained in the upper right cell of Table III, *that is we examined the factor clusters of various strategic groups in a cross-sectional research,* within methodologically static environmental conditions.

5.2. Strategic groups

Strategic groups contain firms pursuing the same or similar SOs in a given industry. *Strategic orientation (SO)* refers to the way of internal and external environmental adaptation processes of companies, with special regard to the content elements of these processes (Chakravarty, 1982). Strategic literature is rich in sectoral and interindustrial studies that identify and characterise the SOs of competing companies in detail (Dranove et al., 1998). This research trend is rooted in the *structural contingency theory of Max Weber* (Weber, 1947) and its priority is the classification of schematic behavioural patterns observable in the environmental adaptation of companies (Ketchen et al, 1997). Academics often call these adaptation behavioural patterns *strategic configurations* referring to the importance of proper fit of numerous organisational and environmental factors (Van de Ven, 1976, Doty et al., 1993).

It is notable that the new *„behavioural approach"* formulated more positive critics for the strategic classifications-based positioning school. According to the representatives of the new stream the sources competitive advantage and strategic orientations based on distinctive resources and capabilities – due to the effect of turbulently changing organisational,

environmental and managerial factors – are very plastic, they permanently transform, former ones cease to exist while new ones arise. *Therefore, as per D'Aveni et al. (2010), instead of static positioning, strategy should be interpreted as „dynamic manoeuvering" in the modern age and managers eventually have to be ready to learn and acquire a variety of strategies to employ adequate solutions in order to adapt to environmental conditions.* For this reason according to Bingham and Eisenhardt (2011) the number of SOs defined by certain typologies are permanently increasing and parallel to the fragmentation of classifications, the role of *„unique" heuristics and „industry- and company-specific" SOs comes into the limelight.*

It's important to notice that instead of the number of heuristics it is their quality that promotes proper business strategy. Bingham and Eisenhardt (2011) *emphasise that heuristics based on simple rules lead to more rational strategies than those derived from analytic methods based on a complex lot of information.* However, contrary to this, greater attention is paid to „hybrid" or „mix" SOs both in scientific and business context (Conant et al., 1993, Pertusa-Ortega et al., 2008). The application of these opens up the opportunity to implement as many parameters as possible to certain models and theoretical frames, moreover, the criteria and attributes which constitute a base for classification, according to the recommendations of the organisational-sociological and psychological approach, can be modified based upon subjective judgements on managerial personality, company size, market environment etc.

As a result of positive critics and fertile intradisciplinary disputes, researches dealing with organisational configurations have become more suitable for exploring the relationship between strategy, external environmental and internal organisational factors and BP (Drazin-Van de Ven, 1985, Dess et al, 1993, Powell, 2011). *In line with the above, conceptual and methodological bases of our research reflect on the changes that took place in the positioning school.* Examples for this are 1) the relationship of SO and environmental uncertainty based on the subjective perception of pharmacists, 2) the appearence of the valorising dynamic manoeuvering in the context of turbulent environmental changes in HPRDS, and 3) the examination of „mix" or „hybrid" SOs (Gray et al., 1999, Doty et al., 2006).

5.3. The basic methodological approaches of the identification of strategic groups

The strategic configurations of companies can be identified with two scientific approaches. M&S's strategic typology (1978) and the classifications of Mintzberg (1973, 1978, 1979) and Porter (1980) were all elaborated on the bases of business case studies and in-depth interviews with company managers and sectoral experts with the help of *„grounded theory"* without *„a priori"* theoretical conceptions. This rather *inductive approach* using „lower-level" tactical- and operative elements observable in the behavioural patterns of firms endeavours to give a kind of *„a posteriori"* picture of the strategies of organisations (Morrison-Roth, 1992). The inductive approach often employs mathematical-statistical methods (e.g. cluster analysis) to classify firms into SOs based on similarities among their functional activities. From the theory-building view of our dissertation the use of M&S's strategic classification as the central construct of the doctoral research means *having a deductive approach*, as we work out our conceptual model, research questions and hypotheses with the help of *„a prori"* theoretical notions.

According to Ketchen and his colleagues, SOs obtained by deductive and inductive approaches *can not be considered as inferior or superior to each other*, because their distinctive power and predictive capability regarding the behaviour and BP of firms are quite similar (Ketchen et al., 1997). Contrarily, Doty et al. think that relevance and predictive power

of typologies having stable theoretical bases and identified by *deductive approach surpasses that of strategic classifications determined by inductive technique* (Doty et al, 1993).

In our dissertation we deal with one of the most significant business taxonomies of the deductive approach, M&S's strategic typology. A bit away from the traditions of the positioning school, our empirical examination focuses on the *realised strategies currently followed by Hungarian pharmacies.* Representing the normative profile of the positioning school we draw up managerial implications for pharmacists about which SOs result in optimal BP in an environment strictly regulated by governmental rules.

6. The strategic adaptation typology of Miles and Snow

6.1. Epoch-making strategic classifications

Representatives of strategic management discipline have failed for a long time to develop theoretical frameworks capable of classifying SOs pursued by companies (Doty-Glick, 1994). However, *in the last third of the XXth century several remarkable strategic typologies have been emerged*, amongst of which the taxonomies of Miles and Snow (1980), Mintzberg (1973, 1978, 1979) and Porter (1980) are especially noteworthy. In contrast with Mintzberg's typology characterised by internal orientation and by having a focus on the configurations of organisations, as well as with Porter's framework which is rather featured by external competitor orientation, *the taxonomy of Miles and Snow is distinguished by its comprehensive manner and it approaches firms as complex system-entities*. Beyond the abovementioned frameworks, further classifications appeared in strategic literature, of which the typologies elaborated by Glueck (1976), Hofer (1980), Fayerweather (1981), Ohmae (1982), Miller-Friesen (1983) and Morrison-Roth (1992) are worth mentioning.

6.2. Changing environmental conditions

Strategic typologies of management sciences used all around the world emerged primarily from observing firms that have been operating in relatively predictable environmental conditions – apart from a few, more turbulent periods (e.g. oil crises, privatisations) – in the past 60 years. *The financial and enonomic crisis that broke out in 2008 led to varying extents of withdrawal in market coordination and to the strengthening of bureaucratic coordination mechanisms, which greatly influenced the strategic behaviour of companies as well* (Kornai, 1983). Recession processes forced states and international communities to intervene following unconventional economic policies. The role of governmental authorities and their tools regulating the operation of firms are currently stronger than they once were in the Bretton Woods system (1944) or framed in the Washington Consensus (1989) (Stiglitz, 2010). This tendency, although in varying degrees, is observable in both developed and emerging countries. (Luo, 1997).

For enterprises facing with more and more turbulent environmental changes (e.g. the evolution of information technology, the removal of trade barriers, increasing competitive intensity) environmental adaptation has become of key importance. *The relevance of strategic typologies elaborated during the presence of less volatile macro-environmental factors was questioned by numerous researches* (Smart-Vertinsky, 1984, Bourgeois, 1985, Hamel, 2009). Empirical examinations more often comprised countries and industrial sectors either characterised by turbulent environmental changes, crises or, where various regulatory authorities restricted the domination of market coordination mechanisms (Lou, 1997, 2001).

Because of this, the strategic adaptation of organisations has been enriched with the incorporation of several environmental variables.

The theoretical framework of our Ph.D. thesis, the M&S's strategic typology also focuses on the environmental adaptation process of organisations. *In the M&S research stream we can also spot a faint, yet noteworthy shift toward the adaptation to the strengthening bureaucratic coordination's numerous measures, and to the exploration of their impact on the BP of companies* (Dyer-Song, 1997, DeSarbo et al, 2005). In studies where examinations also include companies not only operating in classical market economic conditions, authors try to come to terms on a traditional question of contingency theory, namely whether managers *(„managerial choice")* (Child, 1962, Augier-Teece, 2009), or environmental conditions *(„environmental determinism")* have a more determining effect on (the development of) business strategy (Kahn-Katz, 1966, Hrebiniak-Joyce, 1985). The characterisation of strategic behaviour regulated by various governmental laws is of special importance even in the case of HPRDS treated in our doctoral dissertation.

6.3. The adaptive cycle, as the central construct of Miles and Snow's typology

The central construct of the classification – which was elaborated by the professors of UC Berkeley (Miles) and Wharton Business School (Snow) – is the so called adaptive cycle, according to which companies need to come up with adequate solutions to three main problems (Miles-Snow, 1978). To the solution of the *entrepreneurial problem* the organisation have to define the products/services it would like to produce/sell and identify the market segments to target *("product/market domain").*

By addressing the *engineering problem,* companies should develop a feasible operating system for the production and sales of their products/services (Miles et al., 1978). This includes the selection of production and distribution technologies and might extend over the engineering and operation of numerous other business activities – e.g. R+D, marketing logistics, IT – as well. The adaptive cycle's third element is the *administrative problem*, where companies should form such mechanisms – e.g. (in)formalisation, (de)centralisation, specialisation, control, reward systems – which ensure the seamless running of systems set up at the entrepreneurial and engineering stages (Hage-Aiken, 1967).

The adaptive cycle – according to the semantic reference of the terminology – *can not be considered as a static concept.* Depending on the changes of external and internal environmental factors, organisations continuously have to work out solutions to certain aspects of the entrepreneurial, engineering and administrative problems. Accordingly, in certain cases firms have to change their range of products, modify the production processes, or refashion organisational structure. Thus, the modification motive inherent in the adaptation process gives partly a *dynamic* feature to M&S's strategic typology. On the other hand, the perpetually plastic nature of the adaptation process does not necessarily mean that companies do not develop *more or less clearly identifiable, permanent, enduring adaptation patterns.* These – *consistent behavioural patterns* that serve as alternative solutions to all three problems of the adaptative cycle – can be called SOs in the context of M&S.

6.4. The original strategic orientations of Miles and Snow

The authors examined the market of textbook publishers in their first research. They discovered four relatively easy to identify enduring adaptation patterns (SOs) by observing

the environmental adaptation behaviour of companies. These were (Miles-Snow, 1978): *„Prospectors", „Defenders", „Analysers", „Reactors"*. Below is a brief introduction of the profiles of these strategic orientations.

6.4.1. Prospectors

Prospectors ("Kutatók") continuously strive to identify new business opportunities, locate and target new product/customer segments. They consciously search for alternatives offered by changing environmental conditions, what is more, it is often these companies that proactively bring forth sectoral changes. Prospectors are leaders in R+D and product innovation and they try to avoid being committed to using a single-line production and distribution technology. Their continuous developments are accomplished in less hierarchical organisational mechanisms which are characterised by informality, decentralisation and low-levels of control. Regarding BP they primarily focus on market effectiveness (sales, market-share) and satisfying various customer needs with a wide range of products and services.

6.4.2. Defenders

Unlike Prospectors, *Defenders ("Védekezők")* consider the long-term service and exploitation of stable product/market segments as priority. Their range of products and customers are usually narrow, on the other hand, due to their standardised production processes and relatively homogenous product portfolio, they are able to provide, if necessary, quite wide, yet from the standpoint of the use of products, less colorful consumer groups mainly with mass market products. The primary focus of their production and distribution technologies is on maximising cost-efficiency, which, in many cases is the result of a perfectly developed single dominant technological process. In solving the administrative problem, Defenders want to ensure the maximum efficiency of production and distribution, therefore formal structures and rigid rules, centralised decision-making and the strict control of work processes are all characteristics of organisations pursuing similar SOs.

6.4.3.Analysers

Standing in the middle of the strategic adaptation continuum, *Analysers („Elemzők"),* by seeking to create an optimal combination of strengths of Prospectors and Defenders, both want to ensure cost-efficiency and to leverage the potential lying in product innovation. Accordingly, they strive to keep their conventional markets and develop new ones simultaneously. In adapting product innovations they precautiously follow Prospectors, try to correct the mistakes of early entrants and to appear in the second wave of products with alternatives more satisfying to consumer demands. Their technological processes also fit this dual approach, since Analysers usually have two production and distribution technologies, ensuring flexibility and stability at the same time. Their organisational characteristics are quite heterogeneous: compared to Defenders, they are less formal and have less control, while, compared to Prospectors, their decision-making process is less decentralised. In many cases, the dual character of Analyser companies results in a matrix-structure.

6.4.4. Reactors

Contrary to the prior three SOs, *Reactors ("Reagálók")* are not capable of consciously developing a consistent behavioural pattern, which is crucial in successful environmental adaptation. Reactors in most cases do not have a clear, well-articulated strategy. Therefore, the

state of uncertainty and permanent instability are typical of them. They are able to carry out modifications only in the last resort, forced by external environmental factors. M&S basically give three reasons for classifying a company as a Reactor: 1) senior management is unable to formulate a clear SO, 2) organisational structure and processes do not fit properly the pursued SO, 3) in spite of turbulent environmental changes, senior management insists on maintaining the "status quo" by preserving outdated technology, organisational structure and the service of declining market segments.

In Table IV, *the more significant characteristics of M&S's SOs have been gathered together according to the stages of the adaptive cycle.* The main dimensions of the entrepreneurial, engineering and administrative problems have been adopted from the original research of M&S. After the questions concerning the problems and the answers provided by SOs at the end of each stage we have summarised the advantages and risks observable in the behaviours of Prospectors, Defenders, Analysers and Reactors.

6.5. Examples of Miles and Snow's strategic orientations from the global business world

To make it easier to interpret and understand the concepts of M&S's Prospector, Defender, Analyser and Reactor SOs, it is worth mentioning real-life examples of companies pursuing the above SOs. *Apple or General Electric* are fine examples of the *Prospector* SO. Apple has been a leader in product-innovation for decades. In the market of home entertainment electronics (e.g. iPod, iPhone, iPad) the company considers persuading customers to accept its latest technological innovations quickly and keeping up a fast-paced global market penetration of its products as priorities. Due to technological obsolescence, the product/market domains of the company are subject to permanent changes. GE is an innovative corporation performing maybe the most diverse activities in the world. The American firm is present in almost all product/market segments, where it discovers unexplored business opportunities. GE holds firm positions in the fields of conventional and renewable energy sources, nuclear energy, financial and health services, information technology, lighting and also in the production of railway and air transportation equipments.

We could write a long list of true examples of *Defenders* as well. American fast-food chain McDonald's expects its guests with a very narrow product and service range quite cleansed by rational considerations from the beginning. It is well-known that the fast food chain's back office processes are characterised by the highest level of standardisation, specialisation, control and quality assurance, that jointly result in an outstanding cost-efficiency for the company. In no way underestimating their R+D activities, we may regard as rather more classical Defenders those firms that operate chiefly in B2B sectors, like the American *Intel* or the German *Knorr-Bemse*. Not only the narrowing of product portfolio, but the low number of customers are also observable in their cases. Intel produces processors in huge quantities for a few leading computer producers, while Knorr-Bremse manufactures reliable brake-systems for a relatively small number of vehicle producers. These firms have been concentrating their resources and capabilities on their core activities for decades, their research and development efforts mainly aim at the improvement of their products and processes.

One of the most successful example of companies pursuing *Analyser* SO is *Toyota*. The Japanese firm has managed to blend in its vehicles technological refinement, outstanding performance, high quality and reliability as well as the application of extremely specialised, highly controlled production and distribution systems ensuring maximum efficiency. The Japanese manufacturer was wise in bidding his time for a favorable opportunity regarding

which product innovations can remain permanently successful in the long run and drawing the consequences from mistakes of Prospectors, in many cases it was Toyota who introduced the first viable models of mass production (e.g. the hybrid drive-system Toyota Prius). Its success is proved by the optimum balance of outstanding financial and market BP indicators, for Toyota counts as the world's leading automobile manufacturer according to sales and net profit (Fortune, 2014).

Quite surprisingly, we can give examples of companies lacking a clear product/market domain and a consistent SO, exhibiting the behavioural patterns of *Reactors* in environmental adaptation, even among world-famous firms. American automobile producer syndicate, former autocrat for many decades, General Motors in the 2000's gradually lost its competitive advantages. The company that ignored the changes in consumer demands almost completely „slept through" the quality, energy-saving-, and environmentally friendly trends of global automobile industry and in spite of having the widest range of brands available, it had to file for a bankruptcy-protection from U.S. administration in the 2008 outbreak of the financial and economic crisis.

Is sounds astonishing, yet the model company in global information technology, leader in R+D, Microsoft frequently shows the characteristics of Reactor companies. It has continous difficulties in the penetration of the latest version of Windows in the operation system-market. Explorer slowly loses its popularity in the market of internet browsers, while in the search engine market Bing did not have such an impact as top management had expected. The operation period of Microsoft between 2011 and 2013 thus may be called a strategic strategic bottom, the firm now has hopes chiefly for the successes of the 8,5 Bn. USD-purchased Skype, the cooperation with Nokia, Windows Phone operation systems, cloud-based applications and B2B markets. At the same time we must make it clear, *that according to researchers of strategic management, parallel to the decrease in firm size, the distribution of Reactors increases,* therefore we can search for companies that underperform in environmental adaptation decisively in the small and medium sized entrepreneurial sector (Olson et al., 2005, Balaton, 2009).

6.6. The modification of the original typology

M&S extended the their original, case-study like research which had studied textbook publisher companies and later included companies of three more sectors – food processing, electronics (semi-conductor production) and health care services – in their further examination (Miles et al., 1978b). Results clearly confirmed the identifiability of SOs. Besides, Walker and Ruekert (1987) in their article combined the strategic typologies of M&S and Porter with outstanding logical reasoning and theoretical grounding. Based on the type of competitive advantages, Defenders were divided into two groups of *Low-Cost Defenders and Differentiated-Defenders.*

The profile of the first one is practically the same as that of the original Defenders, while Differentiated Defenders are characterised *by serving a market niche consisted of an extremely narrow, stable consumer segment, which requires excellent quality products and additional services.* The relevance of the above two types of Defender SOs have been confirmed several times – and in spite of the methodological shortcomings of their identifiability – they have been incorporated as bases of empirical examinations many times (Slater-Olson, 2000, 2001, Slater et al. 2005, 2006).

6.7. The importance of Miles and Snow's typology

The M&S typology – following the work of Michael Porter (1980) – *is the second most often cited classification of strategic management discipline in the United States* (Hambrick, 2003), while in Hungary both in the fields of education and scientific research it has attracted a rather small attention. Academics explain the persistent nature of the theoretical frame with numerous factors among which it is especially remarkable that although authors connected a number of aspects of company operations explicitly to environmental adaptation, *they managed to preserve their holistic approach treating the organisation as an overall, complex system* (Hambrick, 1983a) to the last. Therefore the implications of the typology prove to be scientifically well-grounded while preserving their easy-to-follow, normative nature which is interpretable to managers as well (Zahra-Pierce, 1990).

6.8. Early criticism

Naturally, M&S's strategic typology also possesses several weak points, among which it is absolutely necessary to mention that in spite of the holistic approach based on the concept of strategic configurations, there is only a limited set of organisational variables and sectoral environmental factors upon which the typology was elaborated (Bowman, 2008, Malik-Naeem, 2011). Hambrick in many of his studies (1983a, 1984) points out that the authors neglecting the rigorous quantitative methodology apparently explored an unambiguous relationship between certain resources, capabilities and the identified SOs, *yet had no evidence supported with statistical arguments on the development of functional characteristics and BP* of Prospectors, Defenders, Analysers and Reactors.

According to these, the validity, reliability, generalisability and the BP implications of the taxonomy demand a permanent examination (Doty-Glick, 1994, Hambrick, 2003). Moreover, the typology to a great extent – though, by no means irreconcilably – *conflicts with the prevailing paradigm of strategic management academic discipline, the approach of contingency theory.* It basically reveals itself in two fields (Hrebiniak-Joyce, 1985):

1. As per contingency theory, specific environmental characteristics decisively determine what SOs are observable in a given market (Katz-Kahn, 1966, Lawrence-Lorsch, 1967, Donaldson, 1996, Boyd et al., 2012). Contrarily, in the original research of M&S, after examining a limited number of firms from one, later altogether only from 4 sectors, *authors would come to the conclusions that all four strategic behavioural patterns are present in certain sectors and that the distribution ratio of Prospectors, Defenders, Analysers are more or less the same, while the number of Reactors is insignificant.*

2. Contingency theory establishes that specific sectoral factors determine, quasi select firms exhibiting permanently optimal BP (Hofer, 1975, Ruekert et al., 1985). On the contrary, studies of M&S did not examine explicitly, applying mathematical-statistical methods, the industrial specifications and unique characteristics of markets of either textbook-publishers, food-processing, semi-conductor production or health care services. At the same time, in their assumptions *they declare that all three viable SOs (Prospectors, Defenders, Analysers) can be equally successful in any sectoral environment and their BP exceed that of Reactors in case of any environmental conditions* (Miles-Snow, 1978).

In the following chapters of our dissertation we refer to the above contradictions related to M&S's strategic typology several times and we plan to deal with their detailed examination in

testing our research questions and hypotheses. These objectives of ours are supported by the fact that the canon of strategic science and the managerial society both treat the examinations of environmental adaptation and BP of SOs as priority (Rumelt, 1972).

7. The classification of the researches of M&S's strategic typology

Scientific publications dealing with the characterisation of M&S's strategic behavioural patterns and their BP implications basically fall into 5 groups according to their perspectives they approach the environmental adaptation of organisations with (Table V):

7.1. Early and profile-setting studies

The pioneers of researches focusing on the examination of SOs discovered by M&S were from the circle of aquaintances of the authors (Snow-Hrebiniak, 1980, Miles et al., 1980, Hambrick, 1981, 1982, 1983). *The first profile-setting publications intended to explore in detail the characteristics of Prospectors, Analysers, Defenders and Reactors.* These aimed to identify the idiosyncratic features of SOs, while later the emphasis was put on determining functional (e.g. production, marketing, logistics, HR, financial) specifications and competencies. *The profile-setting examinations in the 2000's were carried out with a rather profile-expanding purpose* to improve the development of behaviours of certain SOs observable in companies' environmental adaptation. These articles examined such functional activities and special constructs like sales management, technological orientation, market research, personal characteristics of top managers, horizontal/vertical relationships etc. (Schenk, 1994, Slater-Olson, 2000, Kabanoff-Brown, 2008).

7.2. External environmental adaptation

Studies focusing on *external environmental adaptation* (Snow-Hrebiniak, 1980, Hambrick 1983a, McKee et al., 1989, Forte et al., 2000, Desarbo et al., 2005, Short et al, 2007) try to find answers to questions regarding the distribution, development and performance of certain SOs in the cases of various industrial contingencies. Since marketing, as the boundary-spanning function of the company (Hutt et al., 1986, Zahra-Covin, 1993, Achrol-Kotler, 1999) plays a special role in the external environmental adaptation of organisations – in keeping contact with customers, competitors, strategic partners and regulatory authorities – *these studies are basically dominated by the strategic marketing approach* (Day, 1992). Due to our interest in marketing strategy, this dissertation concentrates on the exploration of the potential moderating effect of environmental conditions on the development of the relationship between SO and BP, therefore the BP implications of the external environmental adaptation of Prospectors, Analysers, Defenders and Reactors are to be dealt with in detail later.

7.3. Internal environmental adaptation

Studies on *internal environmental adaptation* and strategic implementation explore the degree of match between various internal characteristics of companies, that is, the configuration of certain organisational variables and the pursued M&S's SOs and its BP implications. In their epoch-making studies Gailbraith and Kazanjian (1986) and Venkatraman (1989) *highlighted the importance of implementation based on the fit of strategy and internal processes*. Over the 25 years that passed since then, implementation process of M&S's SOs have been scrutinised from several organisational perspectives focusing attention on various internal constructs.

In short these were: resources and capabilities necessary for strategy implementation (Aragón-Sanchez – Sanchez-Marín, 2005, Desarbo et al., 2005, Short et al., 2007), personal characteristics of managers (Gupta-Govindarajan, 1984, Slater, 1989), unique specifications of strategic engineering and planning systems (Veliyath-Shortell, 1993), HR management policy (Miles-Snow, 1984, Rajagopalan, 1997), technological processes (Dvir et al., 1993, Schenk, 1994), characteristics of organisational structure (Vorhies-Morgan, 2003, Olson et al., 2005), control and reward mechanisms (Govindarajan-Fisher, 1990, Slater-Olson, 2000), the relationship between headquarter and SBUs (Golden, 1992, Narver-Slater, 1993), the role of lower-level decision-makers in the implementation of strategy (Floyd-Wooldridge, 1992) as well as top management consensus (Bourgeois, 1980c, Homburg et al., 1999b). *Articles belonging to this group are basically characterised by the use of languages of organisation theory, organisational behaviour and classical management disciplines.*

7.4. The depiction of top-performer companies

The new wave of studies dealing with the assessment of BP and depiction of SOs propose *to create the behavioural profile of Prospectors, Analysers, Defenders and Reactors exhibiting outstanding BP observable in certain sectors* (Pleshko et al., 1995, Thomas et al., 1995, Slater-Olson, 2000, 2001, Olson et al., 2005). In such publications approaching from quite heterogeneous aspects, according to the empirical observation of several organisational and external environmental variables (organisational features of marketing function, behavioural orientation, personal traits of CEO, mature or emerging industrial environment, sudden environmental shock etc.) academics strive to give a more complete picture of the strategic configuration of top-performer companies. Such studies are dominated by the *systems approach* of strategic management discipline (Drazin-Van de Ven, 1985, Venkatraman, 1989).

7.5. Thought-provoking studies, methodological and review articles

Besides the above research streams there are also such *methodological works* that intend to approximate the features of M&S's SOs and their BP implications by applying „perfect" set of mathematical-statistical tools and qualitative research techniques. Additionallly, the more than thirty years old past of researches on strategic typology made it possible for academics to write *„thought-provoking" articles* (Walker-Ruekert, 1987, Hambrick, 2003, Malik-Naeem, 2011) and *meta-analyses* (Zahra-Pierce, 1990) summarising empirical experiences, drawing up limitations and potential, fruitful, future research directions. Table V illustrates the studies dealing with research on M&S's strategic typology according to the above classification.

Researches indicated in Table V dealing with various aspects of M&S's strategic typology examined the traits of Prospectors, Analysers, Defenders and Reactors from the perspective of certain management functions (production, marketing, logistics, HR) and scientific areas (e.g. organisational behaviour). Our dissertation – targeting our research objectives – continues with the exploration of the most significant BP implications of M&S's strategic typology.

8. The approach of business performance in strategic literature

Of the practical relevance of M&S's typology we can say that the development of the BP of companies pursuing certain adaptation patterns is of primary interest of managerial society (Lewis-Thomas, 1990). *In strategic management BP is judged by the external and internal environmental adaptation of companies in the short and the long run* (Chakravarthy, 1981). Scientific literature highlights that the environmental adaptation of a company can be assessed

by several aspects. These are (Chakravarthy, 1986):

1. To what extent does business strategy suit the characteristics of industry structure and competitive context?
2. How does the organisational structure of a company fit the environment and the chosen strategy?
3. How does the management system of a company suit the strategy and organisational environment?
4. To what extent do managerial style and mechanisms „tailored" to strategic context?

In our dissertation of the above assessment aspects we put emphasis on the first one. The reason for this is that in the empirical stage of the research we test the relevance of M&S's strategic typology and examine its BP implications in a special sector, the HPRDS characterised by limited competitive intensity and a severe governmental regulation. Besides, pharmacies statistically count as micro and small sized enterprises, therefore in their cases it is difficult to interpret the organisational structure and management system constructs of the adaptive cycle's administrative problem that have been employed rather in corporational context so far. Nevertheless, the management system, style and mechanisms formulated in points 2-4. can not be considered absolutely irrelevant in case of small enterprises either, *although due to the strategic-level approach and BP-oriented focus of our dissertation we have paid very little attention to such organisational variables.*

8.1. The definition and operationalisation of business performance

The conceptualisation of BP may be regarded as a complicated issue of strategic management discipline. *BP is a multi-dimensional construct lacking both a generally accepted universal conceptual base and an operationalisation mechanism* (Chakravarty, 1982). Researchers in many cases are not only unable to approximate the concept of BP uniformly, but even the exact circumscription of the concept of business strategy proves to be problematic. Approving the definition of Donald Hambrick (Chapter 3.4.), our task is to paint a possibly most complete picture of the strategic operation of companies even in evaluating their BP.

8.2. The dimensions of business performance measurement

To define the BP of companies, strategic literature usually employs such quantitative indicators and qualitative constructs that fit well one of the four theoretical categories below (Walker-Ruekert, 1987, Kaplan-Norton, 1996):

8.2.1. Effectiveness

Market effectiveness is the success of the products and programs, actions, measures, campaigns of a company compared to its major competitors. By effectiveness we mean chiefly the extent of long and short-term realisation of business and marketing objectives (Bauer-Berács, 2006), since primarily it is the marketing function and customer perspective that play special roles in its development (Drucker, 1985, Kaplan-Norton, 1996). Effectiveness is measured most often with such indicators like SAL, market share, percentage change in SAL or market share, customer satisfaction, customer loyalty etc.

8.2.2. Efficiency

Efficiency proposes to quantify the profitability of companies. *In economics, all efficiency indicators in a way measure the ratio of applied input resources to output products* (Sajtos, 2004). The often used efficiency indicators are well-known from corporate finance literature: return on investment (ROI), return on assets (ROA), return on equity (ROE), return on capital employed (ROCE), return on sales (ROS), net profit after taxation etc. It is notable that in the past 20 years various management disciplines (marketing, HR management, logistics, IT) have made efforts to justify their strategic added value quantitatively. That is how for example shareholder value would emerge from among efficiency BP indicators that regard the interests of investors as priority and became a popular instrument in assessing strategies and tactical-level programs (Day-Fahey, 1988, Srivastava et al., 1999, Doyle, 2000).

8.2.3. Adaptability

Adaptability is the response capability of firms to permanently changing external and internal environmental factors. It can be evaluated in various ways, its widely used indicators are (Barrett-Windham, 1984, Robinson et al., 1992): the successful launch of new products compared to major competitors in the market, percentage share of turnover generated by new products in total SAL, rate of workforce fluctuation during economic crisis or prosperity etc.

8.2.4. Innovativity

Altough the definition of innovation is still based in many aspects on the production-oriented approach of Joseph Alois Schumpeter (1939), classic author of the subject, in regard with the strategic approach of our dissertation we would prefer stressing the consumer perspective of Peter Drucker. *According to this, innovativity is the fast exploration of such market opportunities by companies* like new knowledge, demographic changes, changes in attitude of consumers, structural changes of the industry, unexpected events, contradictions and process needs (Drucker, 1985). As the operationalisation of the innovativity performance indicators is quite complicated, researchers in many cases relied on applying such essential objective indicators as R+D costs compared to total expenditures or SAL of the company.

8.3. The time-horizon of performance dimensions

Effectiveness and efficiency mostly evaluate *past* performances of SOs pursued by companies since they examine the market and financial results of realised processes expressed with various indicators. However, *adaptability and innovativity*, besides assessing the past market activities of companies, also try to inform us on the probable *future* strategic potential of organisations. Accordingly, BP indicator groups fit properly the various constucts of Kaplan-Norton's „Balance Scorecard" (1996). Effectiveness and efficiency can be paralleled with the *financial and operational* dimension, while adaptability and innovativity show similarities with *customer and learning/growth* perspectives.

8.4. Interactions and research interest

The development of certain BP indicator groups are naturally not independent of each other. For example, it is worth consdering that the outstanding adaptation or innovativity in the short run can result in increasing SAL, greater market-share and eventually higher return indicators as well (Buzzell-Gale, 1987). Researches examining M&S's strategic typology evaluated the BP of SOs concentrating mainly on effectiveness and efficiency dimensions. The prior „simplification" is also supported by Hungarian strategic marketing literature with a proper

theoretical base that regards the following interpretations as priorities: *„marketing efficiency is the return – usually expressed as a percentage of SAL – of marketing expenditures, while marketing effectiveness is the long term efficacy of the marketing objective set – which in most cases is equal to achieving proper and desired market position"* (Bauer-Berács, 2006, pg. 19.). Table VI draws our attention to the variety of BP indicators applied in studies revealing the BP implications of M&S's SOs.

9. The examination of the stochastic relationship between Miles and Snows's strategic orientations and business performance

9.1. Early notions on the BP of Prospectors, Analysers, Defenders and Reactors

The hereby dissertation amongst others subjects two hypotheses originally formulated by M&S concerning the BPs of Prospectors, Analysers, Defenders and Reactors to a detailed empirical examination (Miles-Snow, 1978):

1) *The BP of Prospectors, Defenders, and Analysers in any cases – that is, in optional industrial environmental conditions - exceed that of Reactors.*

2) *Prospectors, Analysers and Defenders are able to exhibit almost the same levels of BP in any optional industrial environment, if the chosen SO is implemented in a consistent way.*

Although later researches would explore many other aspects of the BP implications of certain SOs, the analysis of the above two propositions at least implicitly emerged in almost all of the studies. The original propositions regarding the BP of Prospectors, Analysers, Defenders and Reactors are illustrated in Figure III.

9.2. Donald Hambrick's modification: market effectiveness and financial efficiency

M&S defined the dependent variable quite widely in their examinations of the BP of SOs. The operationalisation of the performance construct did not prove to be concrete either, authors employed a so-called general BP „terminus", which must have been a composite index of market and financial indicators based on objective and managerial judgements as well. Hambrick, who modified the somewhat obscure BP implications of Prospectors, Analysers, Defenders and Reactors, in his empirical research highlighted that due to various adaptation capabilities the *market effectiveness BP indicators of Prospectors exceed* that of Analysers, Defenders and Reactors, *while along the financial, profitability dimension the BP of Defenders surpassess* that of the rest of the SOs (Hambrick, 1983a) as illustrated in Figure IV.

9.3. Bourgeois' slack resource theory

The debate in scientific literature regarding the BP of M&S's SOs evolved with the headway of the concept of „slack" resources. According to Bourgeois (1980b), the set of „slack" resources implying flexibility, resilience or endurance of organisations decisively influences the success of environmental adaptation. Companies *having too many slack resources* necessary for environmental adaptation perform outstandingly in effectiveness, adaptability and innovativity aspects, whereas *firms with insufficient adaptation resources*, owing their stable product/market segment and standardised production processes excel in efficiency. As per this train of thought, we may suppose that in general Analysers, „qualified as „golden

means" can be regarded as the most successful companies and the BP of the 3 viable SOs of M&S describes a curve similar to the Gaussian one. (Figure V) (McKee et al. 1989).

10. External and internal environmental conditions influencing business performance

10.1. Primary factors

Companies pursuing various M&S's SOs are of course influenced by several organisational – and sector-specific factors. The examination of factors determining and influencing BP is a field of strategic management literature which brings about intensive research interest (Rumelt et al., 1994). Academics explain the variances observable in the BP of companies with the following factors, or so-called *primary* analytic levels (Short et al., 2007):

- *Firm-effect* is to be explored by researches (Wernerfelt, 1984, Barney, 1991, Song et al., 2007) that explain the develoment of BP with the availability and use-pattern of the resources and capabilites of companies (Hamel-Prahalad, 1990) as per the interpretation of the resource-based theory of the firm (Penrose, 1959).

- *Strategic group effect* assumes that according to the configuration of certain organisational variables companies demonstrating similar environmental adaptation behaviour can be grouped into strategic clusters and one part of the variance in BP can be explained with belonging to a certain SO (Porter, 1980, Lewis-Thomas, 1990, Fiegenbaum-Thomas, 1995).

- In accordance with the *industry effect,* BP of companies pursuing similar SOs and having more or less similar resources and capabilities could differ from each other, which can be explained with specific factors (market turbulence, technological changes, perceived uncertainty, product-life cycle etc.) characteristic of the sectoral environment (Schmalensee, 1985, Rumelt, 1991, McGahan-Porter, 1997).

- As per the *effect of geographical factors*, the BP of various companies are decisively influenced by what settlements, regions, countries and international communities (e.g. EU, NAFTA, CIS etc.) they operate in (Krugman, 1991, Dunning, 1988).

In our dissertation we continue to deal with the examination of the relationships between BP and behavioural patterns observable in the environmental adaptation of pharmacies, and also with the determining influence of an environment characterised by strict governmental regulation and limited competitive intensity on BP.

10.2. Secondary factors

The *secondary,* interorganisational analytic levels of BP evaluation are the following:

- Corporate level
- Strategic Business Unit level
- Functional or departmental level

The development of BP may be influenced by the perspective, and the level of its approach by researchers. This primarily pertains to the distinction between the whole company and its

SBUs, since in these two fields various significant questions have to be answered. On the organisational level according to the interpretation of Bourgeois' (1980a) *primary strategy* concept the main challenges are the proper selection and delineation of the firm's operational (product/market) domain. Examining BP on SBU-level – as per the *secondary strategy* approach – they evaluate the selection and the way of application of competitive tools.

In the case of pharmacies regarded as micro and small sized enterprises examined in our dissertation we can not use the above mentioned various analytic levels, *as the corporate, business unit and departmental areas would be completely blurred* (Jelen, 1995). Therefore in the followings, we plan to deal with external environmental and sector-specific factors influencing the development of the relationship between SO and BP.

10.3. The ideal environment of Miles and Snow's strategic orientations

As per the implications of the contingency theory which can be regarded as one of the dominant mainstreams of strategic management literature, external environmental conditions greatly determine the development of the BP of companies (Kahn-Katz, 1966, Starbuck, 1976, Ward et al., 1995, Doty et al., 2012). According to this, *firms need to develop such adaptation behavioural patterns that fit properly the conditions of the operational environment of the enterprise.* The degree of fit between SOs and external environmental conditions was treated as priority even in M&S's strategic researches, since the idiosyncratic resources and competencies of *Prospectors, Defenders, Analysers and Reactors* in various contingencial conditions contribute to the development of BP to varying extents.

Based on the experiences of empirical examinations, *Prospectors have a greater frequency of distribution in sectors characterised by high technological and market turbulence*, which are favourabe to their efforts to initiate new products and to locate and address new markets (Miles-Snow, 1978). Due to their innovative operation and their approach proactively influencing sectoral trends, they can „precede" dynamically changing consumer preferencies, therefore it *may result in their outstanding market effectiveness*.

Unlike Prospectors, firms pursuing *Defender SOs prefer stable, predictable technological, market, and legal environments* (Hambrick, 1983a). It does not mean that they do not appear in sectors featured by either intensive growth or recession, yet what is worth mentioning in their case is that according to examinations, they are less able to adapt to sudden changes and radical shocks (Meyer, 1982). In less volatile markets they are able *to exhibit optimal BP due to their stable, high-quality customer/supplier relationships and/or production efficiency.*

Analyser firms can operate both in stable, predictable and dinamically changing settings. As a result of their dual production and distribution focus, they react smoothly to significant changes in the market (McKee et al., 1989, Forte et al., 2000). Experiences show that Analysers are quite „resistant" organistaions, and can be found in prospering, stagnating and declining industries as well, *although their more complicated business structures may eventually block them from successfully making substantial changes.*

Reactors also exist within various environmental conditions. We can locate companies with great ideas that use management techniques improperly in dinamically growing markets, just as well there are firms acting in haste in declining sectors. In spite of having the disantadvage of inconsistent environmental adaptation, still, there's a potential in Reactors which, under critical and acute environmental pressures, may result in their taking proper strategic action.

These firms may be very flexible, as they lack a well-established, long-standing successful business model, the removal of which would lead to organisational resistance and sunk costs (Hawes-Crittenden, 1984, McKee et al., 1989, Dyer-Song, 1997).

10.4. The frequency of distribution of Miles and Snow's strategic orientations

The *frequencies of distribution of Prospectors, Defenders, Analysers and Reactors have been collected in Table VII* on the basis of the most significant M&S studies of the past 30 years. Although researches applied various identification techniques, results may put a different and interesting complexion on the relationship between sectoral environments and SO as well as on the effect of the degree of fit between environment and SO on BP (Hrebiniak-Joyce, 1985). Based on available data Table VII also indicates the absolute and relative distributions of SOs. The industrial, environmental features of the reviewed studies are included in Table VIII.

As shown, *the distribution of Prospectors, Defenders, Analysers and Reactors in sectors explored by various examinations – contrary to the early observations of M&S – is quite heterogeneous* (McDaniel-Kolari, 1987, Conant et al., 1990, Desarbo et al., 2006, Song et al., 2007). In their original research M&S presumed that the distribution ratios of all three viable SOs in certain industries are almost the same and that they greatly exceed the proportion of Reactors. *Though the general minority of Reactors seems unambiguous*, on the ground of the results of Table VII and VIII answering the question whether there is a discernible relationship between certain sector-specific features (e.g. volatility, competitive intensity, innovatity, market turbulence, entry barriers etc.) and the frequencies of distribution of SOs would require a complete research in contingency theory, which is outside of our scope and possibilities. Still, *a research question of what distribution ratios of Prospector, Defender, Analyser and Reactor pharmacies are observable in HPRDS* strictly determined by governmental regulations seems to be an exciting one (Dye, 2004).

10.5. The introduction of industry-specific and environmental characteristics determining business performance of Miles and Snow's strategic orientations

The empirical examination of M&S's strategic typology – as illustrated in Table VIII – were carried out in quite various industries. They studied the potential influencing effect of several sector-specific and environmental factors on the BP of *Prospector, Defender, Analyser and Reactor* companies. In the following we present a list of short definitons of the most often studied external factors which are related to the BP implications of SOs.

- *Volatility:* Markets of high volatility can be characterised by a hectically changing demand and the fluctuation and irregular, uneven development of market growth rate. Moderately volatile markets are determined by a lower degree, yet permanent growth rate, while low volatility can be described as a stable market with contracting growth potential and declining sales opportunities (McKee et al., 1989).

- *Competitive intensity*: In markets of high competitive intensity the number of sellers is significant, entry barriers are low, product differentiation is less typical, so consumers have a number of purchase alternatives available to satisfy their needs (Porter, 1979). In case of low competitive intensity the number of participants of the supply-side is limited, thus consumers trying to satisfy their needs and preferences are compelled to turn to a narrow company population. In case of high competitive intensity the competition between firms is

determined by powerful promotion, cost-efficiency and a price-based competition, where competitors can easily reproduce each other's offerings (Jaworski-Kohli, 1993).

- *Technological turbulence* is the degree of the rate of change in engineering and technological conditions in the production and distribution structure of a certain sector. The greater the degree of technological turbulence, the faster is the obsolescence of products, though the possibilities of customer value creation are also greatly increased (Dvir et al., 1993, Narver-Slater, 1990).

- *Market turbulence*: In markets characterised by high turbulence customers and the composition of their needs and preferences change in a fast pace. Companies operating in similar settings often modify their range of products in order to meet the requirements of permanently changing customer needs (Narver-Slater, 1990, Slater-Narver, 1993).

- *Sudden environmental shock* is a hardly definable and operationaliseable construct influencing strategic behaviour and BP. Compared to high volatility and powerful turbulence it modifies the operational mechanism and the „way of doing business" of a given sector and its participants more significantly and radically. As for shocks, we can distinguish external (e.g. oil price-boom, nationalisation) and internal (sectoral, interorganisational) sudden, drastic changes (Mankiw, 2003), although both have significant effects on the behaviour of companies and the pressure of their environmental adaptation. The adaptation of M&S's SOs have been examined in case of several environmental shocks: e.g. medical strike (Meyer, 1982), tightening supervision of banks (Fox-Wolfgramm et al., 1998), modified financing of health-insurance funds (Barrett-Windham, 1984, Forte et al., 2000), the appearance of generic private label brands (James-Hatten, 1995) etc.

- *Degree of sectoral innovativity:* As per the interpretation of the customer-oriented approach, innovation is a change taking place in macro-environment, industry or within organisation which is related to customer value creation and a higher level quality service of consumers (Drucker, 1985). Strategic management literature operationalise this sectoral factor most often by quantifying the modern production and distribution methods of new products and services introduced in the market in the examined period, perhaps by their share realised in market volume or sales (Hambrick, 1983a).

- *Products and industries in different stages of life-cycle:* The special conditions (different competitive intensity and competitive tools etc.) of the various stages of life-cycle may have a significant determining effect on the BP of companies in different stages of the life-cycle – introduction, growth, maturity, continuance, decline, renewal – operating in diverse sectoral environments and offering different ranges of products (Vernon, 1966). The discipline of strategic management most often declares a product or sector as belonging to a certain life-cycle on the basis of sales volume or growth rate of turnover (Hambrick, 1983b, Anderson-Zeithaml, 1984, Conant et al., 1989).

- *Deregulation:* Governments turn to deregulation if they intend to increase competitive intensity in a monopol or oligopolistic market structure. This means the moderation of entry barriers, the cancellation of targeted governmental subsidies, the suspension of price ceilings and the redundant rules concerning products and services (Varian, 2004). The strategy of companies in sectors liberated from the limitations of regulations radically change resulting in a significant effect on their BP (Snow-Hrebiniak, 1980, James-Hatten, 1995, Vorhies-Morgan, 2003).

- *Regulation:* Contrary to deregulation, the regulation of sectors is the tool of minimising the negative effects of externalities induced by natural monopolies and oligopolies (Bod, 2003). In many cases it means the – often unreasonable – protection of a company or a whole sector regarded as highly important from a certain aspect. Whether it is about a reasonable governmental intervention, or an unnecessary shielding, authority measures greatly determine the development of companies' SO and BP (Snow-Hrebiniak, 1980, Pleshko et al., 1995, Shortell-Zajac, 1989, Ghobadian et al., 1998).

- *Prosperity or recession period:* Cycles of prosperity are observable in real economics and have been studied by representatives of neoclassical economics (Kondratieff, 1925, Keynes, 1936, Solow, 1956 Kehoe-Prescott, 2007). The theory concerning these cycles not by chance drew attention in various disciplines of business administration, including strategic management as well. The adaptation behavioural patterns of companies are subject to changes in the periods of both economic upswing and downturn. Academics in most cases tried to discover the BP implications of the SOs of companies operating in recession environments. Researches carried out in recession waves contrast BP of companies concentrating on the preservation and most efficient reorganisation of their basic profiles, and firms interpreting environmental changes of crises as opportunities to be „seized". (Hambrick, 1983a, Dyer-Song, 1997, Desarbo et al., 2005).

10.6. Special influencing factors

On the other hand, the development of BP exhibited by companies may be significantly influenced by further factors – widely used in strategic management – such as:

- *The type of selected BP indicators*: In judging the BP of SOs it is an especially important aspect, since they lay different emphasis on effectiveness and efficiency. Prospectors focus rather on the former, Defenders on the latter (Hambrick, 1983a), while Analysers strive to keep an optimal balance between the two BP dimensions (McKee et al., 1989).

- *Time-horizon of performance assessment:* Long and short term time horizons presume the priority of different BP indicators and they also determine those to a great extent. It is worth considering that the achievement of higher market share in the short run most often demands high investments, which decreases profitability (Anderson-Zeithaml, 1984).

- *Subjective vs. objective BP indicators:* BP indicators based on subjective managerial judgements might differ from those recorded in objective sources (balance sheets, profit and loss accounts, cash-flow reports etc.). Then again, numerous researches justified that the divergence between the subjective evaluation of company managers concerning BP and objective indicators did not prove to be significant (Morgan et al., 2004).

- *Stakeholders*: Investors, managers, employees, tax authorities, governments, local communities, non-govermental organisations, trade unions, greens and many other organisations are concerned with various types of BP indicators (Chikán, 2003).

- *Company size:* Several authors pointed out the relationship between firm size and BP (Smith et al., 1986, Buzzell-Gale, 1987). According to PIMS researches companies with higher market share also realise higher sales, which due to the competitive advantages of scale-economies is accompanied by increasing return indicators mostly. Company size is

operationalised by scientific literature according to the sales, equity capital or the number of employees of the company.

- *Ownership structure:* The identity of owners, percentage of their share, objectives, mission, and vision decisively determine the judgement of the importance of applied BP indicators, just as they do the development of BP and SO of the company. Strategic literature considers it salient in researches to distinguish between private and national property, professional and financial investors, private, individual and institutional owners, family vs. non-family property as well as making distinctions regarding nationality or cultural background of owners (Chaganti-Damanpour, 1991, Yip et al., 1997, Spector et al., 1998, Hofstede, 2001, Peng et al., 2004).

- *Geographical location:* As a result of the significant differentiation of income disparities and consumer needs and preferences there are very few enterpises whose SO and BP are not influenced by its location of operation. GL can be interpreted on global (continents, international communities) macro- (country, regions within country), meso- (smaller regional units, settlements) and micro- (settlement areas, street, building, location or placement within a store etc.) level, although GL gains a special interpretation almost in each sector. In defining BP in the oil-industry e.g. due to transportation, refinement and network capacities it is mainly the global and macro factors, while in HPRDS treated in our doctoral research it is the meso- (the type of settlement in which a pharmacy operates) and micro-level geographical factors (e.g. it is located in a shopping mall or close to a healthcare center) that can be regarded as crucial (Krugman, 1991, Gimenez, 2000, Szabó, 2009).

- *The structural-, technological- and competitive intensity etc. characteristics of industries examined or compared:* Sectors have strikingly different features, so in examinations where researchers compare the strategic behaviours of companies operating in a variety of sectors, the multitude of special industrial characteristics may influence the success of the environmental adaptation of firms (Buzzell-Gale, 1987). Therefore tracking down and applying sector-specific BP indicators and their influencing factors are feasible in studies. (Rumelt, 1991, McGahan-Porter, 1997, Ghobadian et al., 1998, Andrews et al., 2006).

10.7. Control variables

Filtering the effect of sector-specific control variables that greatly influence BP, the practical interpretation of results is getting a bit unrealistic, though it might shed proper light on the connections between certain organisational variables and their influences on BP. Researches uncovering BP implications of M&S's SOs aimed at controlling for the effects of company size (SAL and the number or employees), GL, ownership structure and the field of activities (e.g. manufacturing or service) on BP to serve as a guide for managers of *Prospector, Defender, Analyser and Reactor* companies in achieving the formulation of consistent strategic configuration and in realising outstanding BP (Hawes-Crittenden, 1984, McDaniel-Kolari, 1987, McKee et al., 1989, Short et al., 2007).

After a detailed introduction of various sector-specific and external environmental conditions and their effects on BP of enterprises, the BP implications of M&S's SOs can be evaluated in a more sophisticated aspect. In the following chapter based on the experiences of intra- and interindustrial examinations of the past 30 years *we aim at assessing the development of BP exhibited by Prospector, Defender, Analyser and Reactor SOs*.

11. The business performance of M&S's strategic orientations

Table IX summarises the empirical results regarding the development of the BP of M&S's SOs. In accordance with the priority of the dissertation – instead of presenting the fragmented BP implications in detail – we paid special attention to the two original propositions of M&S. These were: 1) *The BP of Prospectors, Analysers and Defenders exceed that of Reactors, as well as 2) Prospectors, Analysers and Defenders exhibit almost qually the same BP.*

11.1. Miles and Snow's first presumption

According to the results of empirical studies on M&S's first BP proposal we can say that a significant part of researches – because of the problematic identifiability due to their inconsistent strategic approach – *does not deal explicitly with Reactors, so regarding their BP compared to the three viable SOs they do not settle anything noteworthy*. This is a serious insufficiency of these articles, since making known the means of shift towards the direction of conscious strategic behaviour and the formulation of recommendations concerning the improvement of suboptimal BP for managers of similar companies would result in significant implications (Miles-Snow, 1994).

Secondly, we can clearly point out that the overwhelming majority of empirical examinations integrating Reactor companies as well justified that the *BP of Reactors in most sectors even under the influence of various environmental affecting factors consequently falls behind the BP of Prospector, Analyser and Defender companies* (Hambrick, 1981, 1983b, Parnell-Wright, 1993, Desarbo et al., 2005, Kabanoff-Brown, 2008). This has been confirmed in the most various primary, secondary and tertiary sectors, especially if a given sector was not exposed to major shocks.

Thirdly, within exceptional *environmental conditions Reactors can also exhibit outstanding BP and occasionally outperform Prospectors, Analysers and Defenders.* Such sectors may serve as examples for this which, as a result of the operation of some governmental regulatory organisations are relatively protected and can be characterised by low competitive intenstiy (e.g. the American air transport market of the 1970's) (Snow-Hrebiniak, 1980, McKee et al., 1989, Forte et al., 2000). It is notable that according to studies examining the adaptation to shocks, Reactors are faster and more effective in surviving turbulent periods than Defenders which are also sensitive to drastic environmental changes (Hawes-Crittenden, 1984, McKee et al., 1989, Dyer-Song, 1997, Forte et al., 2000).

11.2. Miles and Snow's second assumption

The empirical studies examining M&S's second observation regarding the equal BP of SOs were far from producing unambigous results. *The articles that confirmed the equal BP of Prospectors, Analysers and Defenders are in minority* (Smith et al.,1989., Conant et al., 1990, Vorhies-Morgan, 2003). Because of the various results, the introduction of the BP implications of M&S's viable SOs demands a differentiated approach.

In most industries featured by moderate volatility, *Analysers* seeking to keep balance between effectiveness, adaptability, innovativity and profitability BP indicators *proved to be the most outstanding companies* (Snow-Hrebiniak, 1980, James-Hatten, 1995, Kabanoff-Brown, 2008). This does not necessarily mean they accomplished the maximum in all dimensions, but performed well above average, so on the whole their BP may be regarded as optimal, thus

opposed to M&S's proposition, the hypotheses of Bourgeois' (1980a) „slack" resources concept seem to prove true.

In case of indicators pertaining to *market effectiveness, adaptability and innovativiy* we can establish that the BP of Defenders – apart from two researches conducted in turbulent environments (McKee et al., 1989, Dvir et al., 1993) – successively lags behind that of Prospectors and Analysers. The opposite of this statement – according to which Defenders outperform the rest of the SOs in the *efficiency dimension* – in contrast with Hambrick's assumption is by no means verifiable, since in numerous sectoral settings they failed to approach Prospectors and Analysers with regard to profitability as well (Hawes-Crittenden, 1984, Veliyath-Shortell, 1993). Of Defenders we can say that although they may be prosperous in many sectors, they prove to be most outstanding in merely just a few ones.

It is difficult to make pivotal statements regarding the BP of Prospectors and Analysers. *In general, along general BP and its efficiency dimensions it is Analysers, whereas in market-effectiveness it is Prospectors that prove to be more successful* (Robinson et al., 1992). Nevertheless in efficiency indicators the disadvantage of Prospectors is more significant than the difference observable to their advantage concerning effectiveness. In volatile sectors characterised by turbulent market and technological changes both adapt well to such conditions (Meyer, 1982, Forte et al., 2000), while in periods of recession the position of Analysers is more stable (McKee et al., 1989).

In sum, regarding the proposition of contingency theory formulated in an earlier stage of our dissertation, based on the results of M&S researches we can say that *Prospectors, Analysers and Defenders can potentially exhibit optimal BP in any environments* (Miles-Snow, 1994). *However, various sectoral contexts are favorable to the resources and capabilities of certain SOs, while to others they are less beneficial* (Boyd et al., 2012). This is the cause for certain strategic behavioural patterns in certain sectors realising outstanding BP in large numbers, while other SOs obtain only moderate performance results. Thus the answer to which of the three viable SOs lead to outstanding BP is indeed, but only partly can be regarded as a determining effect of environmental, industry-specific characteristics.

11.3. The profiles of „top-performer" organisations

11.3.1. Strategic configuration

A great deal of researches ignored the examination of BP variations observable within certain M&S's SOs (Cool-Schendel, 1988). The reason for this is researchers treated various SOs as homogeneous categories. Companies were often classified according to four idealtypical behavioural patterns created by academics which were not accurately distinguished from each other methodologically, *therefore differences regarding behaviour and performance within certain adaptation patterns were blurred*. M&S in their original work established that they interpreted Prospector, Defender, Analyser and Reactor companies as the idealtypical configuration of external environmental, and interorganisational variables, *that is to say, as „pure" SOs* (Miles-Snow, 1978). By doing so they implicitly admitted the disparities – as experienced in the behaviour of environmental adaptation – within certain SOs and even the existence of the so-called *hybrid adaptation patterns* which had been shaped by the combination of behavioural characteristics. (Pertusa-Ortega et al., 2008).

11.3.2. Fit theory

As per the fit theory that examines the configuration of organisational and environmental variables (Van de Ven, 1976), *companies must aspire to develop a perfect configuration*. At the same time, defining this can not be called as an obvious task. The strategic classifications of M&S and Porter presume that approaching idealtypical strategic patterns is a desired objective for companies, as they can exhibit maximum BP in this case (Forte et al., 2000). On the contrary, more rigorous representatives of the contingency theory (Mintzberg, 1979) *maintain that besides fitting a pure strategic configuration, „adjusting" the organisation to permanently changing environmental conditions is at least as much cardinal*. The latter do not necessarily correspond with the environmental characteristics of idealtypical SOs and does not automatically assume the priority of developing idealtypical configurations.

It is an interesting question whether the shortcomings of the fit to given environmental characteristics or the deviation from the idealtypical, pure strategic configuration leads to greater BP fluctuation to organisations, but it goes beyond the length limits of our Ph.D dissertation (Pinto-Curto, 2007). What we can state is a great number of researchers agree that *presuming a simultaneous, perfect fit to idealtypical SOs and environmental conditions seems quite improbable and illusory.* The majority of adaptation patterns are hybrid organisational configurations that try to approach the pure profiles of Prospectors, Defenders, Analysers and Reactors, as well as those environmental conditions which are favorable to them. Companies classified into the same SO can not be considered strictly as a homogenous population either, *as each organisation represents a specific configuration*. Thus the extents of their fit to the idealtypical SO and environmental circumstances also differ, which may lead to BP differences even within given SOs (Veliyath-Shortell, 1993, Pinto-Curto, 2007).

11.3.3. The characteristics of the most successful business practices

The description of the most effective and efficient business practices observable within various SOs, as well as the circumscription of the behavioural profiles of top-performer Prospector, Defender, Analyser and Reactor companies would transcend the limits of our dissertation. Besides presenting the theoretical grounds of the question, we summarised in the form of a table (in Table X) *the ways former researches characterised companies pursuing the same SO and exhibiting at least optimal BP*. We must emphasise that the number of dimensions of analysis – based on which academics describe the organisational profiles of top-performer companies – is still very limited (35-40), since this quite new stream of empirical research which have produced relatively few studies so far, have not revealed all aspects of organisational operation either (Segev, 1989). *Due to their suboptimal BP and frequent exclusions from inspections Reactors are not included in Table X*, while Defenders appear in Walker-Ruekert's breakdown (Low-Cost and Differentiated Defenders).

Following the overview of the development of BP exhibited by M&S's strategic behavioural patterns, *we present the third significant theoretical construct of our dissertation – PEU – in the context of SO and BP*. The BP implications of the extent of fit of SOs and evironmental conditions is to be discussed later in details, since one of the main empirical objective of our Ph.D. dissertation is to discover the moderating effect of PEU by pharmacy managers and GL of pharmacies on the relationship between SO and BP.

12. Perceived environmental uncertainty

In the description of M&S's strategic typology we stressed that according to the representatives of *contingency theory* (Lawrence-Lorsch, 1967, Miller-Friesen, 1983, Russell-Russell, 1992) internal (organisational) and *external environmental factors greatly determine what SOs are pursued by the companies of a given sector.* In addition, as per their reasoning, *the exhibited BP* of Prospector, Defender, Analyser and Reactor companies are also *more or less influenced by various internal and external environmental* conditions, as well as by the development of the behaviour of stakeholders having a decisive effect on the operation of a given sector. Thus the combination of contingencial conditions determine which SOs will be successful and which ones will be less effective/efficient in a given competitive context.

On the contrary, representatives of another mainstream of strategic management assume that it is rather the subjective decision and *conscious strategic choice of managers that influence various aspects of how they observe and perceive operational environment* (Child, 1972, Starbuck, 1976). Accoring to *„managerial choice"* theory, it is neither environmental conditions, nor the behaviour of stakeholders that determine the SO to be pursued, but the choices of managers. Choosing a strategy that fits the subjective professional knowledge and skills as well as the business policy attitude of managers is not only equal to the perception of the environment, but also implies a proactive influence on the elements of the industrial context (Sharma-Vredenburg, 1998).

Similar researches of the scientific literature seek to answer *whether perceived environmental factors or conscious managerial choices determine SOs pursued by organisations* more heavily (Hrebiniak-Joyce, 1985, Boyd et al., 2012). Accordingly, *the interdependence between environment and SO is represented with more emphasis in the conceptual model and operationalisation mechanisms of our dissertation as well* (Khandwalla, 1972). Regarding that M&S's classification is rather based on the implications of John Child's „managerial choice" theory, in our thesis directed towards identifying strategic behavioural patterns observable in HPRDS *we put theoretical construct of PEU by phamacists in the center of our focus of attention* (Duncan, 1972, Downey et al., 1975, Buchko, 1994, Agbejule, 2005).

12.1. About perceived environmental uncertainty in general

In order to select and pursue a consistent SO, *company managers have to interpret factors observable in external and internal environment adequately* (Sharma, 2000). Strategic management literature basically typifies changes experienced in external environment according to five criteria (Dess-Rasheed, 1991).

The first one is the *simple vs. complex* continuum, where the former means that the operation of the enterprise is influenced by only a few external factors and behaviours of stakeholders, whereas in case of the latter, the number of these effects is quite considerable (Lukas et al., 2001, Tan, 2002, Tan-Tan, 2005, Gotteland-Boulé, 2006, Kabadayi et al., 2007). The second feature is *stable vs. unstable*, pertaining to what extent the changes of these factors and the behaviour of stakeholders of the external environment are predictable or uncertain (Miller, 1988, Venkatraman-Prescott, 1988, Yeung et al., 2013, White et al., 2013). A third dimension of analysis captures the *rate of change in external environmental conditions and* stakeholders' behaviour and examines these on the basis of their pace and how long they take (McArthur-Nystrom, 1991, Zahra, 1996, Pelham, 1999, Menguc-Auh, 2008, Bechor et al., 2010).

The fourth one refers to the *hostile or proponent* nature of the development of external conditions and behaviour of affected groups from the standpoint of a company („hostility vs. munificence") (Miller-Friesen, 1978, Goll-Rasheed, 1997, Zahra-Bogner, 1999, Davis-Walters, 2004, Nandakumar et al., 2010). The fifth variable describing PEU is *quantity and quality of information* available to decision-making managers (Aguilar, 1967, Hambrick, 1982, Starbuck-Milliken 1988, Daft et al., 1988, Newkirk-Lederer, 2006).

Based on the above, *idealtypically* we can say that in case of a predictable development and supportive attitude of a small number of environmental factors and stakeholders, as well as the availability of easily accessible, relevant and large amount of information gathered from the environment, *executives perceive* the operational setting of their firms *predictable and stable* (Milliken, 1987, Priem et al., 2002). Conversely, an operational environment characterised by numerous and rapidly modifying factors and „hostile" stakeholders demonstrating turbulently changing behaviours, as well as the hard availability of relevant information, is perceived by managers as *unstable and unpredictable*. (Duncan, 1972).

A management activity performed by companies to understand environmental processes is a more or less conscious, formal or informal *environmental monitoring* (Hambrick, 1982, Jennings-Lumpkin, 1992, Boyd-Fulk, 1996), during which managers and other internal stakeholders collect, scan and analyse external environmental stimuli, changes and trends going off there. Compared to the behaviour observable in environmental monitoring activities of corporations, managers of micro, small and medium size enterprises rather rely on *(their) personal contacts and informal channels* in interpreting external environment (Smeltzer et al., 1988, Beal, 2000, Némethné, 2010).

Aguilar's (1967) study oriented to explore external environmental factors points out that managers turn primarily to subordinates and colleagues if they wish to learn or interpret something about their external environment. Additionally, the article also draws attention to the importance of loose and informal ties with customers, suppliers and competitors. As Kemelgor et al., (2011) noted it is especially typical of micro, small and medium sized enterprises that managers – *to interpret the behaviours of environmental factors and stakeholders appropriately* – provide themselves important information through *a network of close, personal contacts.*

Naturally, emerging sectors described by high growth rates either recession or strong governmental regulation *can be regarded as more uncertain* (Luo, 1997, Yeung et al., 2013, Wang et al., 2013, White et al., 2013). The unpredictability of the behaviours of external and internal environmental conditions and relevant stakeholder groups is further increased by structural reconfigurations, large-scale governmental interventions, transformations and authority regulations observable in certain sectors, just as those we could witness in the past years in HPRDS treated in our doctoral research. Many authors (Forte et al., 2000, Zinn et al., 2008, Matanda-Freeman, 2009) confirm that *companies operating in similar settings perceive a greater extent of environmental uncertainty.* At best, they reply to uncertainty by a more flexible solution promoting permanent adaptation, at worst they give a more „plastic", inconsistent strategic response. Conversely, companies facing stable contingencial conditions and a more predictable behaviour of stakeholders pursue a more clear, more obvious and a more robust SO (Lester-Parnell, 2007, Mintzberg-Waters, 1985).

Strategic management literature abounds in implications rather concerning the PEU of big corporations so in this regard (too) little attention has been paid to the examination of micro

enterprises. Micro, small and medium sized firms targeting mostly „niche" markets are usually featured by more *stable and less complex perceived environmental conditions* by scientific literature (Freel, 2005, Balaton, 2009, Matanda-Freeman, 2009). As a result of their narrow operational focus as well as their limited resources and capacities *they can perceive and process only a very small number of environmental conditions* and are less able to recognise the need for participation in the complex „race for information" (McGee-Peterson, 2000). Many empirical studies highlighted that such enterprises lacking resources and competencies *having ventured into unpredictable and unfamiliar environmental conditions, they would exhibit suboptimal BP* (Babakus et al., 2006).

12.2. The relationship between perceived environmental uncertainty and SO

Research on the interaction between environment and strategy emphasises *that environmental factors do not affect SO of companies in their „pure", objective way but through the filter of managers* (Child, 1972, Buchko, 1994). The different subjective perception of environmental factors and the behaviour of relevant stakeholder groups can lead to a variety of managerial interpretations of identical industrial contingencies, and *a result in various strategic decisions as responses* (Hambrick, 1981, Meyer, 1982, Forte et al., 2000, Desarbo et al., 2005).

Earlier studies also analysed the interrelations between PEU and SO (Miles et al., 1974, Bourgeois, 1980a, Badri et al., 2000, Bastian-Muchlisch, 2009). According to Parnell et al. (2000), enterprises pursuing a „balancing" SO (for example Analysers) *perceive different aspects of their operational environment to be more predictable than companies pursuing other SOs.* M&S's strategic theory is in accord with this train of thought as well. Managers of *Defender companies perceive contingencial conditions to be stable,* so such firms appear most likely in the midst of predictable environmental contexts (Miles-Snow, 1978). The idealtypical behavioural attributes of *Prospectors* on the far end of the strategic continuum benefit from dynamic, changeable industrial-operational conditions, because *their managers regard certain elements of environmental turbulence as business opportunities to seize* (Gray et al., 1999, Namiki, 1999).

Defenders direct much attention to develop an efficient production and distribution structure for their conventional product/market segments in an environment that is predictable and ideal for them. However, *when environmental factors change, they tend to try to avoid dangers by taking measures increasing efficiency and they keep away from innovations demanding allocations of significant resources* (Hambrick, 1983a, Laugen et al., 2006). *Prospectors* on the other hand do not focus on defense against threats in response to intensification of the turbulence, but rather on proactively identifying and locating new product/market opportunities, although *they have difficulties in standardising their operational processes and increasing their operational efficiency under stable environmental conditions* (Miles et al., 1978, DeSarbo et al., 2005).

Managers of *Analyser* companies, that are located somewhere between Prospectors and Defenders in the strategic adaptation continuum (having a dual product/market approach) *can perceive both stability and dynamism in their operational environment.* Thus they may appear in predictable and turbulently changing sectors as well, but their efforts – according to their resources and capabilities – *are directed towards a most detailed analysis and prediction of changing contingencial conditions* (Hambrick, 2003, Zinn et al., 2008). Reactor enterprises, which have been characterised as inconsistent strategies, *appear both in stable and erratic environments, but their less conscious SO and less consistent management features can easily*

lead to suboptimal BP even in predictable, but especially within uncertain environmental conditions (Barney, 1986, Ray, 2004, Tan-Tan, 2005).

It must be established however that *the relationship between the degree of PEU by managers and the distribution of companies following M&S's SOs is by no means to regarded as function-like* (Hambrick, 1981, Meyer, 1982, Forte et al., 2000, Desarbo et al., 2005). Most probably in our doctoral thesis we can find amongst pharmacists pursuing both Prospector and Defender SOs, who characterise the changes experienced in HPRDS with a high and low PEU alike. According to the mainstream of strategic management, *the degree of fit between PEU and the followed SO significantly influences BP realised by enterprises* (Venkatraman-Prescott, 1990, Lukas et al., 2001, Davies-Walters, 2004).

Pharmacies following a *Prospector SO and characterised with low PEU* will not for example be inclined to expand the product and service portfolio best fitted to their resources and competences, *which may result in a decrease in their prioritised market effectiveness BP indicators* (Di Benedetto-Song, 2003, DeSarbo et al., 2005). Likewise, *Defender pharmacies*, when perceiving uncertain changes in their operational environment, *can easily be forced to expand their portfolio, to target and address new patient segments or to adapt different business practices which are not compatible with their idealtypical competences.* This can lead to a *decrease in profitability*, their main BP priority, through not allocating resources to standardise their processes in conventional product/market domains (Song et al, 2007).

12.3. Interrelations of perceived environmental uncertainty and business performance

The interpretation of the interdependence of PEU and SO is further complicated by the integration of BP into the relationship of the constructs. According to authors of a certain group of international strategic research stream, *managers judge the degree of the predictability of their environment based on the development of either present or former periods' BP indicators* (Downey et al., 1975, Swamidass-Newell, 1987, Daft et al., 1988). This peculiar perception can in some extreme cases lead to a distorted experience of external environmental conditions and of the relevant stakeholder groups' behaviour. Simplifying the opinion of the representatives of this trend, we can say that *BP realised by companies is regarded as a sort of determining factor, an explanatory variable in the subjective managerial assessment of the development of external environmental conditions* (Child, 1972, Waldman et al., 2001, Bastian-Muchlish, 2012).

Contrarily, other distinguished scholars of the discipline claim that *the extent of PEU by managers – regarding the behaviour of industrial stakeholders and changes in external environmental conditions – affects BP significantly* (Kotha-Nair, 1995, Namiki, 1999, Agbejule, 2005, Matanda-Freeman, 2009). According to their argumentation, *the perception of stable or unpredictable environmental conditions strongly influences the management characteristics of companies, their structure, operational processes and the various aspects of their organisational culture* (e.g. values, norms, discipline, morale). However, since the latter constructs are also strongly linked to the SO of companies, it was evident to start researches exploring the implications of the interactions between SO, PEU and BP, which relation is also considered as the central subject of interest of our Ph.D. dissertation (Tan-Tan, 2005, Tsai-Huang, 2008, Nandakumar et al., 2010).

12.4. The relationship between strategic orientation, PEU and business performance

As we have seen, companies choose their SO according to the interaction between the determining effect of environmental conditions and its interpretation by managers (Ward et al., 1995). Ideally, *the chosen and followed SO harmonises with the capabilities of the organisations and directs the attention of executives towards different BP dimensions*, therefore *managers will allocate available resources towards functional activities contributing the most to the achievement of BP objectives* they consider as priority both on tactical and on operative level as well (Hitt et al., 1982, Ireland et al., 1987).

Experience suggests that *SO pursued by successful companies and the environmental conditions of firms fit beneficiently* (Doty et al., 1993, Kabadayi et al., 2007). The equivocal or contradictory results of past researches inspecting the connection between SO and BP compelled the integration of constructs pertaining to both internal and external conditions. Studies discovering the content and process elements of corporate and SBU-level strategies and BP implications of environmental fit are „evergreen issues" of strategic management discipline (Li et al., 2005). Scientific literature has adopted the terminus technicus of *„strategic fit" to describe the congruence between SO of companies and their internal and external contingencial conditions,* as well as to draw the BP implications of the degree of this „fit" (Drazin-Van de Ven, 1985).

This strategic fit can basically be examined on the bases of six different theoretical and methodological approaches (Venkatraman, 1989, Lukas et al., 2001, DeSarbo et al., 2005). These are: 1) fit as moderation 2) fit as mediation 3) the proper matching of environment and strategy 4) fit as in the Gestalt school 5) the methodology of the deviation (misalignment) from the theoretically idealtypical profile 6) suitability based on covariance. In our Ph.D research we used the *„fit as moderation"* approach to examine the relationship between SO and BP in detail (Song et al., 2007).

According to our forecasts, pharmacists perceive turbulent changes experienced in the HPRDS strictly regulated by the government as predictable or uncertain to varying degrees. *We presumed that this perception significantly influences the relationship between the chosen and pursued SO as well as the market effectiveness and profitability of pharmacies.* So in the following chapter we briefly summarise the main points of past empirical researches on the potential moderating effect of environment on the relationship of strategy and performance.

12.5. The potential moderating effect of perceived environmental uncertainty on the relationship between strategic orientation and business performance

The identification and quantification of the influences of moderating variables that refine the stochastic relationship between SO and BP is of special interest to strategic management. Many studies can be found in the M&S research tradition, in which excellent points were made about the development of the relationship between Prospector, Analyser, Defender and Reactor SOs and BP by integrating various moderating variables (Lukas et al., 2001, O'Reagan-Ghobadian, 2005, Menguc-Auh, 2008, Bastian-Muchlisch, 2012, Parnell et al., 2012). Among moderators potentially changing the strength and nature of the connection between independent and dependent variables there are usually factors, the modification of which cannot be considered independent from the decisions and measures of managers. *Similar constructs examined frequently in scientific literature are:* environmental complexity and dynamism, hostile or munificent nature of the environment and market, technological and

regulatory turbulence (Tan, 2002, Li et al., 2005, Tan-Tan, 2005, Olson et al., 2005).

Prior to introducing the influence of moderating variables (examined by previous studies) on the stochastic relationship between SO and BP, *we draw our attention to the theoretical and methodological approaches of moderating variables.* We may regard the following approach as generally approved in social sciences to identify and characterise (by their role „in refining" the relationship between two theoretical constructs) moderating variables.

12.6. Identification and classification of moderator variables in social science researches

Variables that can change the significance, strength, direction and shape of the connection between independent (explanatory) and dependent (criterion) variables are called *specification factors* (Klarmann, 2011). In a rigorous interpretation, moderators are only a narrower subset of the specification variables, even though some use these terms as synonyms. *Methodological literature basically distinguishes between two kinds of moderating variables:* one changes the significance and/or strength of the connection between independent and dependent variables, while the other type of moderating variables modify the direction and/or shape of the connection as well (Cronbach, 1987).

Sharma et al. (1981) established a typology for classification of specification variables in one of the most epoch-making methodological articles of academic marketing research. The taxonomy is based on two criterion according to which there are specification variables *that are connected to the dependent variable and there are others which are not.* As per the second one, we must distinguish between those specification variables, *that interact with the explanatory variable and their interaction has a significant effect on dependent variable* and those ones whose *interaction does not have a significant effect on the criterion variable.* This way there are two possibilities for each classification dimension, thus the classification of specification variables is shown in a 2*2 matrix of Table XI (Sharma et al., 1981).

As the matrix illustrates those specification variables that are connected to dependent and/or independent variables and their interaction with explanatory variables has no significant effect on the dependent variable, can fill in for many functions. The colorful terms given to these specification factors also refer to their „multifunctionality": *Intervening, Exogenous, Antecedent, Suppressor and Independent.* Their effects can be interpreted in various ways in terms of the connection between independent and dependent variables.

Homologiser moderators influence the strength of the connection between independent and dependent variables. A specification variable is called Homologiser, if it does not show correlation with independent/dependent variables under examination, and its interaction with the explanatory variable does not influence criterion variable considerably. *Quasi moderators and Pure moderators* are different from Homologiser moderators and Intervening, Exogenous, Antecedent, Suppressor and Independent variables in that their effects may change the previously experienced direction and shape of the relationship between explanatory and criterion variables. The interaction effect of both Quasi moderator, Pure moderator and explanatory variables does have a significant influence on the dependent variable under examination. The difference between them is that while Quasi moderator is in correlation either with the explanatory or dependent variables, or both, Pure moderator is not.

12.7. Empirical experiences regarding the exploration of the potential moderating effect of PEU on the relationship between strategic orientation and business performance

As we have seen in the previous chapters, *according to earlier researches of strategic management, some SOs can be successful only under certain environmental conditions.* Following theoretical implications, the measure of fit between the SO pursued by companies and external environmental conditions can significantly influence BP. Thus the effect of SO on BP depends partly on the fit between the content and process elements of strategy and external environmental conditions, the latter being made up of general macro-environmental, industry-specific contingencies and their subjective managerial perception.

We would like to draw attention here to the fact, that even though strategic literature deals with the moderating influences of both external (macroeconomic and industrial) and internal (organisational) environmental elements upon the relationship between SO and BP, *in our Ph.D. thesis we only examine the potential moderating effect of external environmental conditions and the behaviour of stakeholder groups.* This is why we have collected together those important studies of research from the last decades of strategic management literature in Table XII, in which research was decisively centered around the moderating effects of the determining aspects of external environment.

As it can be deduced from Table XII, researchers examined several moderating variables to explore external influences which have an affect in the development of the connection between SO and performance. Fine examples are theoretical constructs, like contingencial variables pertaining to *environmental complexity, stability, and dynamics, information availability, the degree of change, hostile or munificent conditions and stakeholder behaviour and, industrial life cycle, competitive intensity, degree of market and technological turbulence, governmental regulations* (Child, 1972, Miller, 1988, Venkatraman-Prescott, 1988, 1990, Song et al., 2001, Tan, 2002, Davies-Walters, 2004, Desarbo et al., 2005, Wang et al., 2012, Yeung et al., 2013, White et al.,2013). There are also works of research in scientific literature, *that framed M&S's SOs* – as external, environmental adaptation patterns selected and followed by managers – *into their conceptual and measurement models as moderators* (Matsuno-Mentzer, 2000, Slater et al., 2006, Song et al., 2007, Nandakumar et al., 2010).

The conclusion of Table XII is of special importance, especially from the standpoint of the scientific relevance of our dissertation: *namely, international research on the potential moderating effect of external environment – „refining" the stochastic relationship between strategy and performance – has come up with mixed results and conclusions* (Miller, 1988, Ensley et al., 2006, Newkirk-Lederer, 2006). According to experiences *we have to discern those researches in which external environmental moderating variables did not have a significant effect on the relationship between SO and BP* (Venkatraman-Prescott, 1988, Slater-Narver, 1994, Waldman et al., 2001, Srnivasan, 2011).

On the other hand, *another group of studies emphasises the significant influence of the interaction effects of environmental moderating factors and explanatory variables on BP* (Zahra, 1996, Zahra-Boegner, 1999, Agbejule, 2005, Bstelier, 2005, Hoque, 2005, Tan-Tan, 2005, Wang et al., 2012, White et al., 2013). These also point out that the explanatory power (R^2 Change) of models would significantly increase after including moderating variables.

Thus, *scientific researches were not able to draw decisive conclusions concerning the moderating effect of PEU on the relationship between SO and BP*, which is why there are still

many questions open for debate and many aspects demanding further examinations. In our thesis we would like to fill in some gaps by testing the potential moderating effect of PEU in a special market which can be characterised by the unique mix of attributes of both public and private goods, in the HPRDS which, though strictly regulated by the government, is still undergoing dynamic changes. We continue our dissertation by shortly *introducing the fourth major theoretical construct integrated into our research, the geographical location (GL)* and its implications associated to SO and BP in scientific literature.

13. Geographical location

The fourth main theoretical construct of our Ph.D. research is the GL of pharmacies. We have already discussed the effect of GL of companies on BP briefly earlier in the Ph.D. thesis in a macroeconomic context (Dunning, 1988, Krugman, 1991). According to the empirical experiences of economics, economic geography and sociology, *geographical location plays a significant role in the impacts of economic activities on progress, growth and equality* (Wallerstein, 1983, Krugman-Obstfeld, 2003). That is why scientists of the abovementioned fields have always paid special attention to the macro-level consequences of similarities, interaction and differences between centre and periphery as well as urban and rural areas (Berend-Ránki, 1966, Andorka, 2001).

After the abolishment of restrictions on trading activities and working capital investments in the past few years, *researchers* of international business economics and various marketing disciplines have shown *an increasing interest in analysing the effects of GL on management activities and their BP* (Hymer, 1960, Rugman, 1981, Dunning, 1998, Luo, 2001). The majority of researches on *location-specific factors* primarily centre around the fit between the SO, organisational structure and tactical-level management processes of transnational companies (lately also of small and medium sized enterprises) and external environmental conditions, as well as its BP implications (Buckley-Casson, 1976, Rugman-Verbeke, 2001, Buckley-Ghauri, 2004, Li et al., 2011).

Due to our research focus on HPRDS, *the determining effect of GL on the SO and BP of companies does not make sense in a global context, but rather on an intrastate-level*, thus, this chapter highlights the aspects of GL experienced on the strategic level of micro-scale management. There is a significant interest on part of retail economics, marketing and strategic management in exploring the effect of GL on the SO and BP of companies (Stearns et al., 1995, Roberts-Stimpson, 1998, Sakarya, 2010). *The specific local attributes of regional units strongly influence the operational aspects of companies as well* (Lengyel-Rechnitzer, 2004, Nemes Nagy, 2009).

Researches pay much attention to urban or rural context and their effects for example on the SO of enterprises, the operation of functional areas, the behaviour of stakeholders (e.g. consumers), the willingness of managers to cooperate or take risks, etc. (Sun-Wu, 2004, Velayudham, 2007). *Empirical research results of retail management reveal, that GL and the choice of company site greatly determine the sales and profitability opportunities of retail businesses* (Wolinsky, 1983, Ghosh-McLafferty, 1987, Levy-Weitz, 2012).

Adequately selecting the GL of stores may give companies a sustainable source of competitive advantage through beneficient sales and operational conditions. These competitive advantages largely derive from the size of the agglomeration, transit traffic and purchasing power, the degree of overlapping of the target market segments and the inhabitants of the

agglomeration, the presence of companies offering complementary or substitute products and different operational conditions (e.g. rental costs, overhead costs, local taxes, etc.) (Hotelling, 1929, Huff, 1964, Ghosh, 1986). *Choosing the right GL and the company site is also of critical importance, because it is very hard to change it afterwards and is only possible by using up significant additional resources* (Achabal et al., 1982). This is why managers of retail companies, such as pharmacies operating in the HPRDS, tend to estimate the potential effects of GL on demand and operational costs more and more often (Drummey, 1984). Besides, GL and site of firms, due to their great influence on BP, procreate a distinct element of marketing mix in their own right in retail management (Agárdi, 2010).

Early researches treated GL of companies *as an independent variable* that influences SO and BP directly (Barrett-Windham, 1984, Kean et al., 1998, Premkumar-Roberts, 1999). Later, prestigious internatonal publications began to integrate it into certain conceptual and measurement models *as control variable* (Russo-Fouts, 1997, Goldstein et al., 2002). Authors of the latter research stream examine the stochastic relationships between certain, predefined constructs: how robust they are, or to what extent they change if the effect of GL on independent and dependent variables is filtered.

It is notable that with the advancement of telecommunication and transport infrastructure, the degree of mobility has significantly increased, which induced serious changes concerning the business policies of companies as well. The structure and density of populated areas have changed, the increasing number of greenfield and brownfield investments and the appearance of commuter workforce led *to the fading of geographical constraints of enterprises, and the increase of flexibility in changing the company site.* (Rechnitzer-Smahó, 2005). At the same time such *studies and articles were published in management sciences, that did not interpret GL as a given attribute, but as a factor changeable by managers, and integrated it as a moderating variable into certain models* (Smith et al., 2002, Minai-Lucky, 2011).

The pharmacy liberalisation process taken place between 2006 and 2011 *made it easier to found new pharmacies and thus valorised the importance of the role of GL*, *so we try to shed light on the potential moderating effect of GL on the relationship between the pursued SO and the BP of pharmacies.* We continue our dissertation with summarising the consequencies of scientific literature about M&S's strategic typology.

14. What we know about Miles and Snow's typology

As a conclusion of the literature review stage we give a synthetising summary of the research on the central theoretical construct of our dissertation. After a detailed description of the environmental relevance and BP implications of M&S's SOs, *we summarise what general statements we can make about the typology in spite of the heterogeneous conclusions of various empirical studies.* These cannot be viewed as universal truths; they just reflect the most proven hypotheses.

1. The strategic typology of M&S has been proven to be *relevant and stable* primarily in US markets, yet it has been identified several times in other countries as well.

2. Markedly distinct environmental adaptation behavioural patterns *develop different resources and capabilities*, which are also manifested in the dissimilarities of managerial decisions and actions as well.

3. Academics managed to *identify all four M&S's SOs* in most industries.

4. Researchers *have not found equality in most industries regarding the distribution of companies* that pursue Prospector, Analyser, Defender or Reactor SO.

5. The distinction between Low-cost and Differentiatied Defenders is *theoretically reasonable, but their operationalisation is exceedingly complicated.*

6. *Prospectors* regard the development of *effectiveness* performance indicators as priorities, whereas *Defenders* prioritise *efficiency* indicators. *Analysers strive for an above average* level in terms of effectiveness and profitability indicators simultaneously.

7. The degree of fit between SO and industry-specific, external environmental factors significantly influences the BP of Prospectors, Analysers, Defenders and Reactors.

8. Apart from a few counter-examples, the BP of companies pursuing a Prospector, Analyser and Defender SO always exceeds that of Reactors in turn.

15. The shortcomings and limitations of previous empirical researches

The strategic typology of M&S has been successful from its start, numerous studies have paid special attention to it, and its practical applicability has been proven as well (Hambrick, 2003). *It has been, however, many times in the centre of academic or managerial disputes*. Beginning with its theoretical bases, from methodological instruments to the consequences drawn upon business life, most aspects of the researches directed towards examining the typology have been criticised. In this chapter we discuss those areas which make up the major limitations and shortcomings of past researches, and we also make proposals on the potential treatment of certain problematic issues.

The identification of SOs: One of the cardinal points of scientific research is the methodology that scholars apply to identify M&S's SOs pursued by firms examined. There are four basic methodological approaches to extract Prospectors, Analysers, Defenders és Reactors (Snow-Hrebiniak, 1980, Segev, 1987, Conant et al., 1990):

- Applying the *self-typing paragraph method* managers are asked to choose one among M&S's SOs formulated and phrased in one extended sentence or dense paragraph that describes best the environmental adaptation behaviour of their company.

- *Classification by the authors:* researchers, after getting acquainted in detail with the activities of companies examined, are able classify firms into SOs according to a few arbitrarily chosen criteria.

- *Judgement of independent industrial experts*: in this case an expert who has an intimate and deep knowledge of M&S's SOs classifies companies upon request.

- *Identification based on objective indicators:* researchers classify companies into SOs based on carefully selected quantitative indicators taken from annual fiscal reports, professional reports of chambers, analyses of competition authorities and such similar documents.

- *Scales:* multi-item scales containing statements on certain stages of the adaptive cycle (entrepreneurial, engineering and administrative) are especially suitable tools for researchers to extract SOs via managerial evaluations.

The most widely-spread method is of self-typing paragraphs. It is very practical, though it has many deficiencies. The sentences describing SOs are over-simplified and mirror far too idealtypical behavioural patterns. Phrases focus mainly on the entrepreneurial problem of the adaptive cycle, that is, the product/market and operational domain of the company. This way, by neglecting the elements of the administrative and engineering problems, there is a danger of managers reporting a nonexistent, artificial SO more likely to have been created by academics (Hambrick, 1983*). To ensure the validity of future researches, it is worth identifying the SOs of companies examined with at least two different methods, then comparing the results obtained by statistical tests.*

The difficult identifiability of Reactors: Another weak point of the self-typing paragraph method is that it identifies far less Reactor companies than there exist in fact. The cause of this phenomenon lies in the rather black-and-white definition of Reactor SO: *„Reactors are not able to develop a consistent behavioural pattern of strategic adaptation, nor to identify a clear product/market domain. Their orientation is primarily short-term, their actions most of the time are forced by the pressures of competitive, technological, etc. conditions of market environment."* (Slater-Olson, 2000, pg. 829.) After reading the definition, it must be clear why responding managers are unwilling to sort their company into this SO. Because of this flaw, the simultaneous, combined use of several strategy extraction techniques is reasonable by which the observation of Reactors can be assured.

The exclusion of Reactors from examinations: Many studies have already excluded Reactors, arguing that they are able to exhibit a consistent strategic behavioural pattern, therefore creating their profile is difficult. Most researches also show that their BP falls behind those of other SOs. To encourage conscious strategic behaviour however, it is necessary for researchers to learn more about the main characteristics of Reactors, in order to formulate recommendations concerning the successful environmental adaptation for them.

The incomplete profile of Analyser companies: Even though this SO is represented in great numbers, we know very little of Analysers' behavioural characteristics. To support managerial decisions, it must be clarified whether Analysers are a combination of Prospectors and Defenders, or to what extent they form a separate SO with its own set of management attributes (Hambrick, 2003).

Dominance of large corporations in researches: Studies on M&S's strategic typology focus mostly on large corporations. The examination of SO and BP of micro, small, and medium sized enterprises which make up an overwhelming majority of businesses employing a great number of workers has mostly eluded the attention of researchers. In order to explain this, some claim that SMSs might not develop conscious behavioural patterns in environmental adaptation at all (Lindblom, 1959, Inkpen-Choudhury, 1995, Olson et al., 2005). The statement is provocative, its refutation or verification is up to the future researchers.

The lack of multitple respondents design: Most researches apply a method with single-respondents technique. This may be due to various limits of resources, but if researchers have the possibility, they should reach more than one respondent manager per company (Bowman-Ambrosini, 1997). The opinion of only one executive may show a distorted picture according

to his personality, the information he owns, his interests, functional background etc. Managers for example usually have little information about the way determining problems of the administrative stage manifest themselves on lower levels of the organisation. Therefore, to increase the validity and reliability of researches, it is recommended to apply multiple respondents techniques (Podsakoff et al., 2003).

Doubts about validity, reliability and generalisability: Concerning validity, reliability and generalisability doubts in M&S research arise mostly during the comparison of BP of companies from various industries (Babbie, 1995). For the sake of generalisability many studies have been published, which compared SO and BP of companies operating in different sectors with totally distinct features raising serious doubts about validity. For example the comparison of BP of firms of retail and biotechnology or that of the banking sector and agriculture on the basis of market share or ROI seems as rather illusory. In order to provide higher degrees of reliability and validity, researchers have to be more careful and rather draw conclusions on the BP of M&S's SOs based on companies of the same industry. This might narrow the generalisability of the results of researches, but offers less edge to criticism. An optimal solution would be to conduct as many industry-specific research as possible. This requires resources as only having these could we reach an equilibrium in the current „trade-off" type connection that exists between validity, reliability and generalisability.

The prevalence of performance indicators based on subjective judgement: Though many methodological studies prove that there is a strong correlation observable between BP based on subjective managerial evaluations and BP identified on the bases of objecive indicators, (Ramanujam-Venkatraman, 1986, Morgan et al., 2004) it can be reasonable to check subjective indicators with objective ones for the sake of higher validity and reliability. This is especially useful in the case of turbulently changing, reconfigurating sectors, since managerial views and insights can not always keep pace with real industrial processes in similar instance (e.g. the appearance of new entrants en masse, dynamic growth or decline).

Intended vs. realised strategy: Responding managers often do not clearly understand, which strategy researchers are gathering information upon, current or future strategy, intended or already realised strategy (Mintzberg, 1978)? This must be stated by all means in the very first phase of data collection. The distinction between SOs from this perspective might be of serious scientific added value. If researchers can have the opportunity to compare intended and realised SOs at different points of time, they can make useful recommendations on modifying SO and on the process of strategic transition.

The lack of longitudinal research: The majority of research done on M&S strategic typology was cross-sectional. As in strategic management literature in general, in the cases of M&S research especially, there is a great need to execute longitudinal, panel-type examinations. This way researchers could solve many problems outlined in the previous point: they could formulate managerial recommendations about how to change SO, what characteristics describe the process of strategic transition, what choices to be made to manage it etc.

The limited number of stakeholders during performance evaluation: In the future it would be appropriate to avoid the notion, that only effectiveness and efficiency indicators important to managers and investors are viewed as priority. New, up-to-date indicators have to be introduced in evaluating BP of M&S's SOs, which are demanded (as employee satisfaction, customer loyalty, environmental impact) by further individuals or stakeholder groups (e.g. employees, environmentalists, non-governmental organisations).

The lack of the inspection of performance differences within strategic orientations: Authors usually focus on BP variations between Prospectors, Analysers, Defenders (Low-cost vs. Differentiated) and Reactors. Researchers in the future should pay more attention to BP differences within certain SOs and reveal factors contributing these differences to managers.

The prevalence of researches in Anglo-Saxon business cultures: Apart from a few exceptions (Dyer-Song, 1997, Peng et al., 2004, Pinto-Curto, 2007, Kabanoff-Brown, 2008, Datta et al., 2009) authors of the M&S literature draw their consequences based usually on experiences about companies operating in US markets. The examination of SOs poses a challenge in countries and regions, where there does not exist a huge, unified market, and whose markets can not entirely be characterised by the „standards" of Anglo-Saxon business culture. The industries of the BRIC (Brazil, Russia, India, China) countries, which are traditionally characterised by turbulent environmental changes and strong governmental interventions, just as well the developed and powerful European markets (whose business culture is a bit different from that of Anglo-Saxon markets), like Germany or France are priority research targets of M&S focused strategic approach.

Neglecting the examination of markets of smaller countries: Researchers should pay more attention to what extent M&S's typology can be regarded relevant in the markets of relatively small countries, like Hungary. Berács et al. (1995) analysed marketing strategies of Hungarian companies in a post hoc manner in the early and mid 1990s. They distinguished between five strongly different SOs by examining business environment and four other factors which are especially important in the development of marketing strategy (strategic objectives, the competitive method to achieve objectives, market segmentation and targeting, as well as positioning based on price and quality). Defenders striving for Efficiency, Quality, Low-cost, as well as the Offensive and Balanced Growing strategies produced remarkable overlappings with the Low-cost, Differentiated Defender and Prospector SOs of M&S and Walker-Ruekert.

Of course many other theoretical and methodological defects and underresearched fields could be listed apart from those mentioned above. There seems to be a huge demand for researches focusing on today's prioritised aspects of administrative problem (e.g. the composition of top management team, strategic thinking of senior managers, corporate culture, organisational values and norms, etc.). It seems to be an endless potential target for researches to examine to what extent and with what tactical and operative activities different business functions (marketing, HR, logistics, controlling) can contribute to the development of BP of firms following different M&S's SOs. Also the turbulently changing environment of global economy calls for research into the risk aversive and risk-taking behaviour of M&S's SOs, even in financial, investment and numerous other operational aspects as well (Hambrick, 2003). *In the following sections we summarise the objectives of our PhD research, which also respond to the open questions and shortcomings of earlier academic studies.*

16. The scientific significance of the doctoral dissertation

The academic significance of our dissertation lies in the fact that it tests one of the most well-known typology of strategic management literature that has not been explicitly examined in Hungarian research before, moreover, in a regulated industrial environment (Berács et al., 1995). Our empirical research tries to eliminate the conceptual and methodological shortcomings of past international studies as far as possible. Thus, our thesis contains the following scientific approaches and methodological solutions, which are novel from the

perspective of strategic management discipline (Csepeti, 2010):

1. We examine the relevance of M&S's strategic typology among firms operating in a special industry that can be described with a particular mixture of *micro-economic attributes of public and private goods*, and which is characterised by *strong state regulations* (Fiegenbaum-Thomas, 1995, McGahan-Porter, 1997, Andrews et al. 2006, 2009).

2. The *degree of competitive intensity* in the HPRDS – featured by *bureaucratic coordination mechanisms and strict ethical norms* – is limited. This is exceedingly rare in mainstream strategic management research as most of these studies examine companies whose operational environment can be described with high degrees of competitive intensity and strong market coordination mechanisms (Ghobadian et al., 1998, Luo, 2001, Boyne-Walker, 2004, Bastian-Muchlish, 2012). This poses a challenge to our dissertation in determining to what extent companies pursuing a Prospector, Analyser, Defender and Reactor SO are observable and what BP they exhibit in the HPRDS characterised by a *recently increased, otherwise still limited competitive intensity.*

3. We examine the prevalence of M&S's strategic classification in a special industry of a country, the *companies of which are less influenced by those economic and sociological attributes of the Anglo-Saxon business culture* that have been dominant in prior researches (Dyer-Song, 1997, Kabanoff-Brown, 2008).

4. We test M&S's strategic taxonomy in the *market of a relatively small country*, for which there is only a little precedence in previous researches (Pinto-Curto, 2007, Talpová, 2012).

5. Our research aimed at identifying Prospector, Analyser, Defender and Reactor SOs and revealing their BP implications among the population of pharmacies that statistically count as *micro and small enterprises*, contrary to the dominance of corporations in mainstream research on M&S strategic typology.

6. In spite of the operationalisation difficulties in identifying Reactor companies, *we also integrate pharmacies pursuing Reactor SO into our research* (Vorhies-Morgan, 2003, Olson et al., 2005) and we endeavour to help them turn towards a consistent strategic behaviour with our suggestions based on empirical evidence.

7. To ensure higher degrees of validity and reliability, *we apply three measurement tools to operationalise behavioural patterns observable in the environmental adaptation of firms* and to classify pharmacies according to their SO: the self-typing paragraph method, Segev's multi-item scale and the method of objective indicators (Snow-Hambrick, 1980, Conant et al., 1990). To confirm convergent validatity in its classical sense, *we examined the degree of concordance or difference between the classification results of the three measurement tools by using statistical tests as well.*
8. In order to achieve higher degrees of validity and reliability, we substitute subjective BP evaluations which are based on managerial judgements and often applied in strategic literature with *SAL (sales) measuring market effectiveness and NP (net profit) describing financial profitability* in our research.

9. In the HPRDS characterised by bureaucratic coordination mechanisms and limited competitive intensity, turbulent scale governmental interventions took place in the past years. *A decisive empirical objective of our dissertation is to examine how the PEU by*

pharmacists affects the development of the stochastic relationship between SO pursued by pharmacies and their BP. Our dissertation is meant to contribute to the clarification of mixed results previous researches have come up with in analysing the effect of potential moderating factors on the relationship between SOs and BP and to add more implications to the topic by narrowing the current „knowledge gaps".

10. After the loosening of the legal requirements regarding pharmacy foundation, the *GL of pharmacies cannot be viewed anymore as an „unalterable" attribute for managers and its development might presumably influence the SO and BP of enterprises.* It is our stressed methodological priority *to shed light on the combined moderating effect the GL of pharmacies and PEU by pharmacists might have on the development of the relationship between SO and BP.* By integrating control variables pertaining to the socio-demographic characteristics and site attributes of pharmacies we test the robustness of the effect SOs and potential environmental moderating factors might have on BP.

11. By the *explixit methodological contrasting* of the definitive mainstream of *contingency theory* in strategic management discipline and the *managerial choice approach* developed by John Child we plan to explore whether the SO of pharmacies is determined by turbulent changes in environmental conditions and in the behaviour of sectoral stakeholders or the subjective perception of changes taking place in external environment contributes to conscious strategic choice of pharmacy managers (Boyd et al., 2012).

In the previous paragraphs we have often mentioned that we test the relevance of the M&S strategic typology in a market that bears the characteristics of both private and public goods, in the HPRDS featured by bureaucratic coordination mechanisms and limited competitive intensity. Thus in Chapter 17 *we delineate the main micro-economic differences between public goods and private goods and present the industrial context of our empirical research*, i.e. we briefly explain those turbulent changes that took place in the operational environment of the sector radically altering the conditions of pharmacy management and seriously influencing SO and BP of pharmacies.

17. The introduction of the Hungarian public retail drug supply

17.1. The interpretation of the activites of pharmacies in the microeconomic context of public and private goods

The scientific significance of our dissertation is greatly determined by the fact that the „retailer" participants of HPRDS sell a special kind of *„value proposition" which can be characterised with the traits of public and private goods at the same time*. This special *„value proposition" is health in general, and the right to a healthy life and providing equal access to health care products and pharmaceutical services in particular* (Pollitt-Bouckaert, 2004). Therefore it is necessary to summarise the microeconomic differences and similarities of public and private goods in a few paragraphs in order to understand the operational and regulatory mechanisms of HPRDS as well as the micro-level management of pharmacies (for a detailed comparison see Tables XIII-XIV-XV-XVI-XVII).

Paul A. Samuelson, a significant Nobel-laureate economist claimed (1954) that economic goods can be classified on the basis of two properties: *Rivalry and excludability*. Rivalry pertains to the measure of how the consumption of a good by a certain individual reduces the utility of other consumers. Excludability means the measure of how the consumer of the

goods which are usually of a limited supply exclude other individuals from enjoying the benefits of consuming the given goods. Based on competition and excludability economic goods can be classified into a 2*2 matrix as illustrated in Table XVIII.

Table XVIII: Classification of economic goods according to rivalry and excludability

CLASSIFICATION OF ECONOMIC GOODS	Excludable	Non-excludable
Rivalrous	***Pure Private Goods*** *(e.g. smartphone, automobile, bread, clothing items)*	***Common Goods*** *(e.g. commons, woods, seafish, minerals, case of bees and pollen)*
Non-rivalrous	***Club Goods*** *(e.g.theather, satellite television)*	***Pure Public Goods*** *(e.g. defense, fresh air, jurisdiction, public lighting)*

Source: Table made by the author based on Peston (1972) and Head (1974)

Nobel-prize winner *James G. Buchanan*, maybe the most important academician of public policy decision-making suggested the integration of another microeconomic attribute, the *divisibility* into the study of the distinction between public and private goods. According to Buchanan, *in case of pure public goods there cannot be individual consumption, because every individual consumes the whole of the stock and the consumed total will be the same for every individual*. On the contrary, *in case of pure private goods total consumption equals to the sum of the consumption of each individual, which is determinable and can be divided into parts* different (from each other) in terms of size and quantity (Buchanan, 1968). Based on divisibility, Buchanan classifies goods into five groups, which can be found in Table XVI. If *we examine the composition of the product and service portfolio of Hungarian public pharmacies according to the abovementioned theoretical frameworks*, it is easier to understand why the economic aspects decisively determining the basic mechanisms of the regulatory environment of the HPRDS are so special.

Pharmacies offer several drugs and services that show similarities with the properties of *pure public goods.* Many prescription (Rx.) drugs are considered to be such goods that satisfy basic social needs, which *could not be produced and sold in sufficient quantities by a system based on market decisions*, because their properties (e.g. the high prices of oncological medicines) would prevent the return of costs incurred (e.g. due to the lack of solvent buyers) (Cullis-Jones, 1998, Gallai-Török, 2005).

That is why *social insurance indirectly, through community financing* provides for the production and distribution of such goods, and *makes them accessible free for insured or for a smaller fee for every patient.* As a public good, it is also true for Rx. drugs, that every insurant can consume them at the same price, even though individuals need these products in different quantities and their reservational prices also differ (Cullis-Jones, 1998, Varian, 2004).

Examining divisibility however it is easy to notice that the amount consumed by individuals can be measured and determined and does differ, *which slightly weakens the pure public good nature of Rx. medicines* (Buchanan, 1968). When discussing divisibility, it is important to note that there are so-called *moderately dividable goods as well available in domestic pharmacies*, which can be enjoyed by more than one individual. One example is vaccination, which by being consumed by one person gives additional protection to others as well, thus benefits

multiple individuals with a positive external effect (Meade, 1952).

When legislation and healthcare government claim for example that those enjoying insurance and other actors in the healthcare and pharmaceutical system *„irresponsibly overconsume" certain publicly funded medicines*, they actually emphasise those attributes of these products which *are characteristics of common goods*. In such cases they remind stakeholders that if non-excludability is interpreted falsely, then sooner or later there will be those who, *because of scarce and diminishing resources and stock, will not be able to access healthcare products, or that not those will access them who would need them most according to a medical or a pharmacist professional point of view.* This latter phenomenon leads to the reduction of the utility of some individuals, which in turn is a cardinal trait of competing products.

There are many medicines and other products being sold in pharmacies, *which demonstrate the idealtypical traits of pure private goods as well.* According to the state, allowing market coordination mechanisms to ensure the production and distribution of OTC medicines or cosmetical products does not violate the right of citizens to equal access to healthcare (Kay, 2007). These goods are rivalrous in the sense that consumption of an individual lessens the utility of other individuals potentially intending to enjoy the consumption of the given good (especially because these are produced in limited quantities, a priori not made for all members of the society). *When dealing with private goods there is also the possibility of exclusion, since their consumption is only possible after paying their full price.* Anyone can be excluded from consumption who cannot gain „possession rights" of these goods due to a lack of financial resources. In the case of OTC medicines and other products available in pharmacies, *the divisibility of consumption among individuals prevails.*

Many sector-specific situations can be identified in the HPRDS, in which pharmacies and some of their products or services act as *club goods.* This may occur when the equilibrium of supply and demand in the consumption of goods that are basically not rivalrous *can be ensured for example via the introduction of capacity limits, which can lead to the exclusion of some of the individuals.* In this case, the utility of those who can access the goods will not decrease compared to each other, but that of those who cannot, will be.

Such a situation can manifest when a patient faces shortage of stock of an Rx. medicine, or when there are too many customers waiting in the officina and thus the pharmacy is simply unable to serve any more patient at a given time. *The challenges of managing „club" goods may increase in the near future especially in connection with the expansion of the institution of the so-called pharmacist's care.* A possible redirection of certain simple healthcare services – e.g. examinations and screenings or vaccination – into pharmacies may further raise capacity limits (e.g. number of expediators, service counters), which can lead to severe „bottlenecks" and an increase in excludability (Buchanan, 1968, Pollitt-Bouckaert, 2004).

In the past paragraphs we have tried to prove with the toolkit of mainstream economics dealing with public goods why the operation of Hungarian public pharmacies can be regarded as business and public activities incorporating the special traits of both private and public goods simultaneously. *The microeconomic founding of this duality* was absolutely necessary in order to understand the continuous fracture lines and ongoing debates experienced in the regulatory processes of the HPRDS and their effects on the SO and BP of pharmacies later on.

17.2. Attributes of micro-level strategic planning and management in the public sector

With full knowledge of the specific characteristics of the HPRDS, which bears all the microeconomic features of both public and private goods, we can presume *that these characteristics will lead to different manifestations of the strategic-level aspects* – e.g. planning, implementation, execution, feedback, and correction – in the case of operation of public pharmacies (Bryson, 1995, Davis et al., 2001, Boyne-Walker, 2004, Andrews et al., 2006, 2009). However, it is important to note that, from a statistical point of view, most pharmacies are considered to be micro or small enterprises, thus *from the point of view of organisational theory their strategic management procedures are determined by the characteristics of these entrepreneurial forms* (Davig, 1986, Chaganti, 1987, Gibbons-O'Connor, 2005, Spillan-Parnell, 2006).

Additionally, after the wave of privatisation in 1994-96, pharmacies that were operating as parts of public property before have become private property, and despite corporate enterprises emerging as financial investors during the pharmacy liberalisation period of 2006-2011, *almost 2/3 of the entire Hungarian public pharmacy population is owned by pharmacists and their family members or friends* (Hankó, 1996, Bodrogi et al., 2010). Table XIX exhibits all of the dimensions that characterise the unique, ideal-typical manifestations of the strategic management procedures of *companies operating in public sectors, in the form of SME, in family ownership, or within conventional, competitive markets.*

The table illustrates that the *"soft fiscal constraints"* typical of the public sector (Kornai, 1980) results in a different approach regarding *the interpretation of BP and in the prioritisation between various BP indicators* that is radically distinct from that of companies participating in the competitive market (Boyne-Walker, 2004, Zinn, 2009). *Political groups and legislative bodies* having significant bargaining power among external stakeholders exerts *a great influence on both the content and formal elements of the strategies of* companies producing or distributing public goods (Cullis-Jones, 1998, Llewellyn-Tappin, 2003).

A general goal of managers of publicly-owned companies and/or of firms operated by taxes is *to maintain balanced power relations and positions* (Stevens-McGowan, 1983). Thus, they usually refrain from making high-risk strategic decisions – e.g. targeting the modification of the range of products/markets. The high demand for transparency and significant media coverage also contribute to this phenomenon (Walsh, 1994, Li et al., 2008). Rigid structures, high degree of formalisation, departmentalisation and centralisation that generally characterise firms in the public sector *usually result in these organisations leaning towards more retractive, compliant and passive SOs* (Cervera et al., 2001, Andrews et al., 2009).

However, *the attributes of private micro, small, and medium sized enterprises can impart remarkable heterogeneity to the slightly "unidimensional" and "monocultural" strategic management characteristics of companies operating within the public sector* (Ghobadian et al., 1998, Gimenez, 2000, Ghobadian-O'Reagan, 2006a). For example, a company leader who is concerned with sustaining his/her family and *the succession issues of the family business* works towards the lasting prosperity of the enterprise for decades, *has little interest in political cycles* (Ghobadian-O'Reagan, 2006b). *Managers of such firms as being professionals* of their trade, know the particularities of the sector, and have stable customer and supplier relations, *and recognise the necessity of adapting to the changing needs and preferences of key stakeholders* (Harris et al., 1994, Pittino-Visintin, 2009).

This results in the *appearance of market coordination mechanisms both in the strategic planning and management processes of family enterprises* (Kornai, 1983, Appiah-adu – Singh, 1998, Gibbons-O'Connor, 2005). Despite the centralised decision-making procedures of enterprise managers, *there is a potential for these companies to follow a consistent SO*, due to their less rigid organisational structures and operational attributes (Pelham, 1999, Aragón-Sanchez – Sanchez-Marín, 2005). *In an optimal case, this can result in the incremental alteration of the product/market domain and the applied competitive tools.*

Based on the factors listed above, it is safe to say that strategic behaviour of pharmacies examined in our dissertation – *which operate within the public sector, but are otherwise private property* – are characterised by a peculiar 'mixture' of the idealtypical particularities of the community, SME sector and family enterprises. Even though the central theoretical construct of our thesis, the strategic typology of Miles and Snow has been examined by a few research studies within the context of public services and family businesses (Ghobadian et al., 1998, Andrews et al., 2009, Pittino-Visintin, 2009, Zinn et al., 2009), *to the best of our knowledge, there has never been a similar empirical research within a public sector where societal needs are covered by privately held micro enterprises.*

Previous research projects observed the dominance of Defender and Reactor SOs in the public sector, but enterprises pursuing Prospector SO are also quite frequent (Ring-Perry, 1985, Andrews et al., 2009). The latter mostly applies to smaller organisations, *even though the difference between Prospectors and Defenders, Analysers, Reactors is not as significant in this context as it is on the competitive market* (Boyne-Walker, 2004, Zinn et al., 2009). Past M&S research pertaining to the examination of micro enterprises shed light on the fact that *the margin of strategic "manoeuvre" of these enterprises is highly determined by the informal interactions between family members*, *as well as the way they collectively interpret environmental changes as a group* (Ghobadian-O'Reagan, 2006a, Ghobadian-O'Reagan, 2006b, Pittino-Visintin, 2009). This, despite the general minority of Analysers experienced in the case of entrepreneurial forms of this sort, results in the emergence of a relative variety of SOs, *where the distinction between Prospectors, Defenders and Reactors is quite clear.*

In our doctoral research, we were attempting to examine the degree to which strategic behavioural patterns of M&S are observable in the HPRDS, which bears the idealtypical characteristics of both public and private goods. We were also eager to reveal the consequences of sector-specific shifts and modifications in the manifestations of M&S's SOs and in the development of their BP implications as well. *Now we continue our dissertation with the presentation of changes that took place in the environment of HPRDS during the course of the last 25 years.*

17.3. Chronology: Milestones in sectoral legislation after the centrally planned economy

In the era of the socialist planned economy, the pharmaceutical supply chain and its key stakeholders have been public property for more than forty years. *This closed, strictly regulated structure has limited the intensity of competition and assured stability for its participants for decades.* Products manufactured by Hungarian pharmaceutical companies (Richter, Egis, Chinoin, Biogal, Alkaloida) were distributed by the *"Pharmaceutical Sales Company" (Gyógyáru Értékesítő Vállalat – Gyógyért)*, as the sole domestic wholesaler (Antalóczy, 1993). The exclusive import rights on the domestic distribution of foreign products were owned by the international pharmaceutical wholesaler *Medimpex*, which was also obliged to forward the imported products to *Gyógyért* (Szabó, 2009). After these medical

products were obtained by *Gyógyért* (the predecessor of *Hungaropharma*), *it distributed them among the non-overlapping "pharmacy centres" operating in the capital and in nineteen counties of Hungary.* These centres then coordinated the stocking and the delivery of these products to public pharmacies (Bárd, 2009). The supply of hospitals was carried out directly by Gyógyért, without the involvement of pharmacy centres.

Political and economic transitions of 1989-90 quickly shed light on conflicts of interest between participants. The process of privatisation took longer than expected, since there was a lengthy debate on whether the income from the assets of pharmacies sold should belong to central budget or local governments. This debate has been set by Act LIV of 1994 on "the establishment and cartain rules of pharmacies' operation", which adjudged the income to municipal governments (Poszmik-Barta, 2009). The most significant wave of pharmacy privatisation (in 1994-96) took place within this legislative framework. *As a result of the special sectoral structure, simultaneous privatisation of pharmacies and pharmacy centres meant that the entire pharmaceutical wholesale and retail trade became private property* at *the same time* (Antalóczy, 2001). This resulted in the emergence of various privatisation techniques and owners in each region. Most pharmacies were bought for a fair price by pharmacists formerly operating them, but some pharmacists, especially in the capital and western part of the country, were unable to buy pharmacies they operated due to lack of funds, and thus *they needed to obtain loans or resort to the help of financial investors* (Szabó, 2009).

Privatisation has changed the intensity of competition among the participants, both in a horizontal and a vertical approach. In the new system, privatised pharmacy centres and a number of tighter cooperations organised by individual pharmacists managed to obtain a wholesale distribution authorisation, and thus they took up wholesaler's functions, such as the stocking and distribution of drugs. However, this meant direct competition for *Gyógyért*, which had a monopoly previously, as well as for the foreign wholesalers that started distributing in Hungary in the meantime (*e.g. Phoenix Pharma*) (Bárd, 2009). *It led to a relatively large number of wholesalers that were competing for the right to supply public and institutional (e.g. hospital) pharmacies.* During the period of consolidation, *wholesalers with a well-capitalised ownership gradually obtained pharmacy centres, and later some of the more significant participants have merged or have aquired* (e.g. Hungaropharma, Medimpex and Pannonmedicina) (Poszmik-Barta, 1995).

About 1800-2000 pharmacies were established within the HPRDS, most of which were independent and owned by pharmacists, however, various forms of cooperation (e.g. procurement associations) have already appeared. Privatisation has also occurred on the side of production: the most important Hungarian pharmaceutical companies were purchased by foreigners, medicine was imported in large quantities after the liberalisation of the market, and significant global pharmaceutical producers founded subsidiaries and commercial presences in Hungary (Antalóczy, 1997, 2001). *The time period between 1994 and 2006 is commonly referred to as the era of the "Ethical model" within the HPRDS.*

Act XCVIII of 2006, "on the general regulations of safe and cost-efficient supply and distribution of drugs and medical devices" has dramatically changed the operational mechanisms of stakeholders of HPRDS. *The necessity of the Act of Drug Distribution (ADD) has been underlined by legislative bodies as follows* (Mihályi, 2006, Bodrogi, 2010):

1. Hungarian citizens consume more drugs than necessary

2. The price of – mostly generic – products available in Hungary is higher than the European average
3. The central budget and the National Health Insurance Fund of Hungary subsidise more medical products and to an excessive extent which is not necessary and sustainable
4. As a result, annual deficit of the state pharmaceutical budget is bigger than planned
5. Competitive intensity between pharmacies is rather low, the quality of service is not optimal, and patients' access to pharmacies' services is low and uneven.

Our thesis is not attempting to decide which of the aforementioned points proved to be realistic, it merely summarises the results of the taken governmental measures. Cuts on the range of subsidised products and the extent of subsidies, reference pricing, delisting and payments from manufacturers helped eliminating the tens of billions (HUF) of deficit the state pharmaceutical budget had to face, as well as achieving a positive balance (Dankó.Molnár 2011). There was a decline in state-supplements for prices of drugs, which led to a minor fall, and later stagnation in consumption. The National Health Insurance Fund of Hungary (NHIFH) and the National Institute of Pharmaceutics (NIP) have introduced a new system of subsidy and admission policies, more attention has been focused on generic drugs, and the rise in prices of medical products has been stopped (Dankó, 2012).

There has been a minimal improvement in the public accessibility of pharmacies, but inequalities between smaller settlements and larger cities have further increased (Bodrogi et al. 2011). The percentage of the price margin provided by legislation for retailers and wholesalers has dropped, however, OTC products were sorted into the category of open-fare goods by legislative bodies (Kuti, 2009). *There was a 20% increase in the number of pharmacies, which led to an intensifying degree of competition, to changes in pharmacy management and operations, and to significant differences in BP.* The time period between 2006 and 2011 is often called the *"Mercantile" era* of the HPRDS.

17. 4. Ethical vs. mercantile model

For the systemic characterisation of the pharmaceutical supply chain the terms of ethical and mercantile dichotomy are often used by professionals of health care sector. In the member states of the European Union, legal aspects of the operational environment of pharmacies are often determined by the peculiarites of ethical and mercantile philosophies. *In addition, the degree of prevalence of the idealtypical characteristics of both philosophies significantly influences the management procedures of pharmacies as well.* Based on international experience, the choice of an appropriate model itself does not necessarily result in the perfect operation of the public drug supply sectors of individual countries (Melia et al. 2010). *The emphasis is on the quality of management of systems running within an ethical or a mercantile legislative framework, and thus both models have the potential to be effective and efficient* (Taylor-Harding, 2011). In a European context, the ehical model is applied in Germany, France, Austria and Sweden, while a mercantile system is operating in the UK, the Netherlands, the Irish Republic and Belgium (Bíró, 2009, de Aguiar et al. 2014).

The key merits of the ethical model are the emphasis on public drug supply *as community service, solidarity, social fairness, and the principle of equal access to public goods.* The ideal typical features of the ethical model are the following ones (Szabó, 2009):

- Pharmacies can only be owned by qualified, professional pharmacists
- A pharmacist is only allowed to own one pharmacy

- The pharmacist in charge, who has specific, so-called "personal rights" to lead a pharmacy, is not allowed to have another profession besides being a pharmacist
- The pharmacist and his/her pharmacy maintain a monopoly within the boundaries of a given geographical location regarding the distribution of human medicines
- A pharmacy is only permitted to sell drugs and other pharmaceutical products directly associated to healthcare (e.g. medical devices)
- Due to a low intensity of competition marketing activity of pharmacies is rudimentary

In contrary, *mercantile philosophy values market-economic competition, efficiency, entrepreneurial mindset and satisfaction of consumers' needs and preferences*. The idealtypical attributes of mercantile model are the following (Holdford, 2007, Feller, 2010, Melia et al. 2010):

- Anyone (e.g. private individuals, enterprises with/without legal personality) is allowed to own a pharmacy
- The pharmacist in charge can be replaced
- Pharmacy owners are allowed to own multiple pharmacies, thus it is possible for them to operate a pharmacy chain
- The pharmacist in charge is allowed to have another profession which is compatible with his position
- Regulations on the range of products/services offered in the pharmacy are less limited, or non-existent
- Some medicines can be purchased by patients not only in pharmacies, but at other retail units (e.g. drugstores, gas stations) as well

Naturally, neither the ethical, nor the mercantile model can be observed in its "pure", ideal typical form in any country (Taylor-Harding, 2001). *As a result of the complex system of societal requirements, various hybrid structures have emerged during the implementation of the different institutional models with remarkable shifts of emphasis* (O'Toole, 2000). A similar description applies to the last two decades of Hungarian regulation as well, *since, for a long time, pharmacies were mostly operated according to the ethical model until the mercantile turn of 2006, while a reorganisation towards the ethical model can be observed since 2011.* This gives a unique, "mixed" quality to the environment of pharmacy operation (Hankó, 2012, Hankó-Zalai, 2012). In the following sections, we present the trends associated with the application of the ethical and mercantile models in the Hungarian public retail drug supply, and investigate the particularities of pharmacy management largely determined by the characteristics of the regulated industrial environment.

17.5. The operation of Hungarian pharmacies in the era of Ethical model (1994-2006)

The legislative foundation of the operation of the HPRDS has been established with Act LIV of 1994. *Moreover, due to the social embededdness and a large number of stakeholders of the pharmaceutical supply sector, further legal measures (laws, ministerial decrees) have also contributed to the development of its framework.* It is important to highlight Act LXXXVII of 1990 (on the prices), Act XXV of 1998 (on drugs), and decree no. 22/2001 of the Ministry of Healthcare, on the marketing and advertisement of human medicines and non-medical healthcare products (Székely, 2009, Feller, 2010).

By accepting Act LIV of 1994 on the establishment and operations of pharmacies determining the main rules and guidelines of HPRDS, *the parliament has practically removed the sector*

from under the effect of mechanisms prevailing in free market economy, giving these special enterprises (pharmacies) engaged in public drug distribution a unique, local monopoly. This protection was granted by the following legislative measures (Hankó, 1996, Szabó, 2009):

- Public pharmacies could only be established and operated by pharmacists who were natural persons officially approved as professionals possessing specific rights/responsibilities and registered by the NPHMOS
- It was a strict constraint regarding the foundation of pharmacies that in order to ensure local monopoly and improve accessibility, the rule of "every 5000 citizens get one pharmacy" was required to be obeyed
- A new pharmacy could only be opened at a minimum distance of 300 m from already operating pharmacies. In cities with a population above 50.000, this distance was required to be at least 250 m.
- A public pharmacy could only be founded in the form of a private enterprise or a limited partnership. Other economic associations (e.g. limited liability companies or joint stock companies) were not allowed to own pharmacies. In the case of limited partnerships, pharmacist with legal personality was required to be an internal partner, and the share of internal partners' ownership was required to be over 25%

It is apparent that the parliament gave the right to the retail supply of medical products to independent pharmacies for the most part. The exclusion of wholesalers, manufacturers and other investors from pharmacy ownership – especially from the position of internal partner possessing the rights to control over pharmacy operations – *put this sector in a system that was completely different from traditional entrepreneurial forms, strongly hindering initiatives for vertical integration* (Poszmik-Barta, 1995). However, due to a number of 'tricky' techniques, financial investors and wholesalers started to "pop-up" among pharmacy owners from the 90's, albeit in an "undercover" form. *Moreover, even though regulations have been adjusted to the needs of independent private pharmacies, pharmacists have also recognised the need for unified actions against wholesalers and manufacturers dominating the market.* This coordination manifested itself in various procurement association initiatives or other forms of cooperation, which were not entirely successful for the most part (Szabó, 2009).

17.6. Legal changes in the era of the Mercantile model (2006-2011) affecting the foundation and operation of pharmacies

The ethical system has been radically transformed by Act XCVIII of 2006. In the following sections, *we summarised those provisions of the law on economical pharmaceutical supply* – affecting the operation of the total Hungarian healthcare system – *that especially pertained to the establishment and operation of pharmacies.* By creating the Act of Drug Distribution, *government advocated the improvement of the quality of service as well as accessibility, and the reduction of the prices of medical products.* This was mostly reflected by the fact that even though it kept "pro forma" the regulatory frameworks of Act LIV. of 1994, but it made the establishment of pharmacies in Hungary easier by creating a number of simple *"loopholes"* (Grabarits, 2006). *The set of main legislative measures initiating the process commonly known as "pharmacy liberalisation" by citizens are listed below* (Feller, 2010):

- The establishment of new pharmacies can be allowed even in the light of the regulations regarding the population limit of 5000 citizens, in case the pharmacy offers certain additional healthcare, pharmaceutical and retail services in its portfolio.

- Such additional services are, for example, longer opening hours. The law enables new pharmacies to be established if they are open for 24 hours a day, or for 60 hours a week; or if they are open for 40 hours a week but ensures continuous stand-by.

- If pharmacy owners agree to deliver the necessary medical products for in-patients – by their request – within a 2 km geographical radius of the pharmacy, or launch a website which allows users to order drugs online, they are relieved from under the previous regulations and are allowed to establish new pharmacies.

- One of the most important legislative measures of Act XCVIII of 2006 was the moderation of ownership regulations on companies operating pharmacies. According to this law, any kind of economic association – e.g. limited liability companies and joint stock companies as well – could gain ownership shares in a pharmacy.

- Regarding ownership shares compulsory belonging to pharmacists, the law only stated that the pharmacist possessing specific rights to lead a pharmacy must gain ownership shares. In practice, this could have even meant a 1% share in a limited liability company. As a result, the influence of pharmacists (natural persons) – possessing the specific rights and responsibilites for professional operation – in the management procedures of these new pharmacies decreased.

17.7. Main consequences of the liberalisation in the Hungarian public retail drug supply

17.7.1. Increase in the number of sectoral participants and in competitive intensity

In the light of the Act of drug Distribution, in practice anyone could open a pharmacy at any location. *The "pharmacy boom" meant that the number of pharmacies operating in Hungary, which was about 2000 in the ethical era, has risen by 20%, thus, there are around 2400 public pharmacies operating in Hungary today* (Bodrogi et al., 2012). The fact that the moratorium on the establishment of pharmacies has been extended by the parliament until the beginning of 2011 has also contributed to the increase in the number of pharmacies, even though by that time it was obvious that a market of this size is unable to hold this many participants. *From an economic perspective it comes as no surprise that if the number of participants on the "supply" side increases by 20% while drugs' sales volumes are stagnating, the degree of competitive intensity among pharmacies also increases, which can lead to the "market exit" of certain players* (Hankó et al., 2014).

17.7.2. Management difficulties and performance variations

The rapidly increasing number of new market entrants to the sector resulted in a significant drop in the average sales and absolute gross margins per pharmacy. Rising operation costs (e.g. utilities, salaries) and additional administrative expenses (e.g. compulsory auditing, solidarity fees) put additional obstacles in the way of pharmacies (Bodrogi-Hankó, 2008). *The system suffered from great inequalities, which led to significant variations in the BP of pharmacies. According to reports issued by the HCP, almost a quarter of domestic pharmacies were operating at a loss* (Bodrogi et al., 2010), while those businesses that were able to adapt to turbulently changing legislative conditions and developed an innovative strategic attitude, were exhibiting outstanding financial results (de Aguiar et al., 2014). In larger cities, pharmacies were competing each other, while in rural areas were struggling against lowering purchasing power, depopulation, and urban pharmacies attracting their

conventional patients (Lindblom, 1959, Hankó et al. 2014).

17.7.3. Concentration, vertical integration and horizontal cooperations

17.7.3.1. Pharmacy Chains

The fact that the degree of concentration, vertical integration and horizontal cooperations in the sector was rapidly growing was also an important consequence of the Act of Drug Distribution (Douglas-Dowling, 1990, Szabó, 2009). *A large number of wholesalers and financial investors have gained pharmacy ownerships at a rapid pace.* These well-capitalised enterprises have often established pharmacy chains to *make use of synergies* derived from economies of sale and their bargaining power against other stakeholders to enhance their own competitiveness (Jambulingam et al., 2005, Hamilton, 2009).

These chains had coherent rules for marketing, procurement and stock management, which sometimes limited the professional and management autonomy of pharmacists. However, *they often resorted to loans and contributions from wholesalers to fund their first investments and initial stocks, which resulted in serious debts to wholesalers and credit institutions* (Bodrogi et al., 2010, de Aguiar, 2014). Meanwhile independent pharmacies have also realised that the key to long-term stability of operations is to develop some form of cooperation (Dollinger-Golden, 1992).

17.7.3.2. Franchise-type cooperations

The initiatives of Hungaropharma and Phoenix Pharma (both wholesalers) *offered independent pharmacies a unique alternative for cooperation and strategic partnership. "GyöngyPatika" and "Szimpatika"* – the programmes that most resemble franchise-type partnerships – *provide their members with a broad range of additional services, as well as the opportunity to purchase medicine at a reduced price* (Feller, 2010). The significant marketing support, which involved the usage of a large scale of ATL and BTL advertising media channels and tools, and aimed at building a homogenous brand image, has to be highlighted (Holford, 2007, Lengyel, 2014). Favourable payment terms, additional benefits concerning bank account holding, and the purchase of vehicles as well as discounts for fixed and working capital investments are also worth mentioning.

Pharmacies joining these programmes run by wholesalers were bound by contract to make most of their purchases (80-85%) through the wholesaler, with the possibility of a symbolic financial contribution in exchange for certain services or benefits (Jambulingam et al., 2009, Szabó, 2009). *The appeal of these programmes largely comes from the fact that they offer purchasing benefits, marketing support and other services without wholesalers acquiring a share of ownership in participating pharmacies, so the professional and managerial autonomy of pharmacists can be preserved* (Kay, 2007, Feller, 2010). Hundreds of pharmacies have joined these initiatives so far, and "GyöngyPatika" and "Szimpatika" programmes have been positively received. However, *it is considered too soon to establish that these franchise cooperation projects will be those institutional forms that provide struggling pharmacies with a stable and profitable position* (Csepeti, 2014).

17.7.3.3. Bottom-up cooperations – procurement associations

A large number of independent pharmacies – unwilling to join either the chains of wholesalers

and financial investors, or the franchise-type strategic partnerships of wholesalers – were looking for alternative ways of cooperation. In most cases, these pharmacies gathered into procurement associations, in order to gain benefits from wholesalers and producers (Cannon-Perreault, 1999, Srnivasan, 2011). They strived to fund and carry out shared marketing programmes, and were looking for more extensive and more organised ways of communication and professional consultation with patients as well as physicians (Berry, 1995, Hamilton, 2009). Cooperation, however, requires the strict and *disciplined management (e.g. in stock management or at sales promotion campaigns) as well as the acceptance of shared ambitions, solidarity towards member pharmacies, and the omission of opportunistic forms of behaviour* (Dollinger-Golden, 1992). In view of all this, it appears that the success rate of such initiatives is largely variable (Szabó, 2009).

17.7.3.4. Independent pharmacies

Not all of the pharmacies were striving to take part in chains or strategic partnerships. *The number of traditionally independent pharmacies giving prominence to professionalism and heavily stressing autonomy of pharmacists is still considerable, even these days* (Hankó et al., 2014). Observations suggests that these self-dependent pharmacies are usually located in rural areas holding local monopolies, or at promising well-frequented urban sites and have been more successful even before the liberalisation of pharmacies by maintaining excellent relationships with stakeholders (Hankó et al., 2013, Csepeti, 2014a, b).

17.8. The restoration process towards the ethical model

Up to this day, no objective, politically and economically unbiased study has been carried out on the impact of the process of liberalisation initiated by the Act of Drug Distribution accepted in 2006. *The present dissertation does not aim at producing such an assessment*, it merely points out that opening the market in this field has yielded positive results and extreme anomalies as well. The government formed after the elections of 2010 rather focused on the reduction of these anomalies, *adopting the correctional proposals of the HCP which was known to oppose the aforementioned liberalisation process from the beginning*. In recent years, the ADD has been modified in order to help restructure the supply chain of medicinal products, and several other laws and regulations have been passed, the most significant ones of which are listed here (Hankó, 2012, Hankó, 2013, Sohajda, 2013, Miles and Snow, 2014):

- According to the legislative amendment concerning the ownership structure of pharmacies*, a minimum of 51% majority ownership of pharmacists is required in order to establish a pharmacy from 2011 onwards.* Pharmacies already in operation have to conform to these criteria in two stages: they are required to reach a minority ownership by pharmacists of 25% by 2014, and a majority ownership by professionals of 51% by 1 January 2017. Share of wholesalers can be maintained and chains can also keep up to 25% of their interests, though they are not allowed to gain additional ownership and recruit further members.

- *The HCP* – in cooperation with the governing bodies of domestic healthcare, various credit institutions and funds – *has developed a subsidised loan programme to stimulate the support for the purchase of shares of ownership for pharmacists* possessing personal rights.

- According to the changes in legislation, *from 2011 onwards, it will only be possible to open a new pharmacy if geographical and population criteria deem it necessary.* Nevertheless, the government, opposing several lobbies of professional organisations of advocacies, did

not put a ban on the foundation of new pharmacies in the summer of 2010, but postponed putting it into force to the aforementioned date. More than 150 requests to found new pharmacies were submitted to the NPHMOS even during this half-year period. This measure, which can be viewed as an interphase of the mercantile model, supported mostly the opening of pharmacies that provide additional services, and were of substantial interest to financial investors and wholesalers.

- In order to raise the quality standards of services provided in pharmacies and ease the workload of pharmacy employees, legislative bodies have regulated heavily the minimum number of pharmacists and specialised support personnel employed by pharmacies depending on their weekly opening hours. *According to the new regulations, pharmacies are required to employ at least three pharmacists and specialised support personnel in pharmacies that are open for more than 60 hours a week, and at least four pharmacists and specialised support personnel in pharmacies that are open for more than 70 hours a week.* This legislation resulted in additional expenditure especially for pharmacies operating with longer opening hours in an urban context, participating in equity-based or franchise-type cooperation projects to a larger extent.

- *These changes in legislation imposed stronger regulations on pharmacy marketing activities, especially regarding customer loyalty programmes* (Bódis, 2011). According to the 8th subparagraph of the 17th paragraph of the ADD, the price of drugs subsidised by NHIFH cannot be further reduced by any price- or not price-based discount. Moreover, in the case of drugs not subsidised by the social security fund, additional benefits can only be used for the services of pharmacist's care provided in the pharmacy. Benefits listed under this law (e.g. free samples, vouchers, coupons, loyalty points of purchase) can only be given for items not listed as medicines, i.e. other products. This means that benefits granted by loyalty programmes can only be implemented in connection with non-medicinal products or additional services of pharmacist's care. Loyal customers may further receive price-based discounts for non-prescribed medications as usual.

Despite continuous legislative corrections, *the characteristic traits of the mercantile model still determine most domains of pharmacy management*. Due to emerging forms of cooperation, increased competitive intensity, the stagnation of demand, the transition of patients' preferences, and several other factors influenced by the legislation (e.g. the expansion of generic products, lowered subsidies of the NHIFH, price margins' regulations, regulations on prescription practice, the institution of pharmacist's care) *pharmacy management cannot return to the conventional practices of the ethical era* (Gill et al., 2010). Conscious and ethical marketing activities, rational stock management, extensive correspondence with stakeholders, and efficient organisation of work and HR management are also indispensable criteria of outstanding BP in the period of restoration, *which brings about turbulence in the market, professional and legislative environment* (Willink, 2009, IMS Health, 2012). Following the introduction of the industry our research examines, we present the practical relevance of our thesis.

18. The sector-specific and business policy relevance of our research

By presenting the consistent behavioural patterns firms exhibit while adapting to their environment, M&S did not only create an academic construct, *but by focusing on BP implications also attracted substantial interest in the fields of management and economic policy as well.* The practical relevance of our thesis on the behavioural patterns of pharmacies

pursuing Prospector, Analyser, Defender and Reactor SOs can be summarised as follows.

The ADD of 2006 has drastically changed the conditionalities of pharmacy operation. *External environmental turbulence has transformed the management processes of pharmacies to a great extent.* Numerous managerial tasks – e.g. the adjustment of the portfolio of pharmaceutical products and services to the turbulently changing demands and preferences of patients, the rationalisation of stock management, the professionality of marketing activities and the development of relations with stakeholders of the pharmaceutical supply chain – became prominent (Gummesson, 2002, Spillan-Parnell, 2006). However, *the majority of pharmacists were lacking the business knowledge and competences required for the effective and effecient performance of these tasks* (IMS Health, 2012, de Aguiar, 2014).

Ideally, the aforementioned tactical-level management tasks can be *derived from a consistent environmental adaptation pattern* (Lindblom, 1959, Inkpen-Choudhury, 1995), *the identification of which no one has endeavoured to applying rigorous statistical methodology in a Hungarian industrial environment so far*. Furthermore, a number of previous research projects in the field of strategic management tend to deny the diversity, at times even the presence of consistent SOs in regulated sectors (Dranove et al., 1998, Hambrick-Fredrickson, 2001). The fact that studies examining environmental adaptation patterns of pharmacies have identified scientifically less well-grounded SOs primarily based on international, secondary results, further confirms the necessity of the present dissertation from a sector-specific perspective (Jambulingam-Doucette, 1999, Jambulingam et al., 2005).

Based on prior research, most striking distinction was observable between managerial features of *marketing- and sales-oriented pharmacies* (Jambulingam et al., 2005, Harrison, 2005). Distinction was based on criteria such as range of products, intensity of market research, innovation capacity, level of stocks, role of front-line employees, equipment, opening hours and other similar dimensions. Idealtypically, at developed, *marketing-oriented* pharmacies pharmacists offer general lifestyle counselling services, actively cooperate with several stakeholders, and influence their needs through a proactive attitude (Prahalad-Ramaswamy, 2004, Bauer-Mitev, 2008, Willink, 2009, Saini-Visht, 2014). At *sales-oriented* pharmacies cost-efficiency is one of the highest priorities. As a result, personal contact between pharmacists and their customers is scarce and sporadic, patients get what they demand, while pharmacists only passively cater to their needs (Mitev-Bauer, 2008a, Feletto et al., 2010).

International research have also concluded that besides environmental adaptation patterns pharmacies display, pharmacists themselves can also be sorted into a number of different behavioural clusters (Feletto et al., 2010, Jambulingam et al., 2005). Based on marketing activities, the quality of service and willingness for generic substitution, it is possible to classify pharmacists into four groups: *Customer-friendly, Manager, Conservative and Passive* (Hindle-Cutting, 2002, Gill et al., 2010). These examinations usually categorise pharmacies on the basis of entrepreneurial mindset, and the level of managerial proactivity. We believe that results listed above may lead to the conclusion that *M&S's strategic typology can have relevance concerning HPRDS.*

Since 2011, HPRDS has been undergoing another series of turbulent environmental changes. The elimination of the harmful effects of pharmacy liberalisation has begun, as well as a clear rearrangement towards the ethical model. *Among government actions aimed at the consolidation of public finances, austerity measures concerning national pharmaceutical budget were of utmost importance.* The so-called "Széll Kálmán plan", for example, has

lowered governmental subsidies on publicly funded medications from 343 billion HUF to 190 billion HUF within the course of three years (Szepesi, 2012). As a result of blind bidding procedures, the percentage share of cheaper, generic products among state-subsidised drugs has dramatically risen. Thus beneficial savings have been achieved in the budget, however, *stakeholders of the drug supply chain – including pharmacies – suffered a significant loss of income, as well as various anomalies regarding operational processes* (e.g. due to lower levels of realised gross margins) (Hankó et al., 2014).

The unfavourable evolution of the macroeconomic environment (2007-2012) have led to a fall in purchasing power and a stagnation in the demand for drugs while the increase in workforce and overhead expenses *intensified the difficulties in pharmacy management. On the other hand, several industrial policy measures have been taken in order to improve the BP of pharmacies* (e.g. generic compensation, service fee, solidarity contribution, and the correction of wholesaler's margin). These measures were also striving to minimise dissimilarities between high and low turnover pharmacies (Hankó, 2012b, Hankó-Zalai, 2012b).

According to the best of our knowledge, there is no short-term prognosis for the radical improvement of macroeconomic factors providing solutions for management problems pharmacies have to face, thus their successful adaptation to environmental changes and the professional management and development of micro-level management processes have been highlighted (Gray et al., 1999, Davis et al., 2001, Némethné, 2010). *We believe that by consciously choosing and consistently implementing a SO, pharmacies are able to influence their BP and attenuate the negative effects of restrictive macroeconomic, and the turbulently changing industrial environment* (Dye, 2004). The aim of our dissertation is to examine the relevant questions concerning pharmacy operation, and to formulate managerial proposals. Thus, it offers the following benefits to pharmacy managers and industrial policy makers:

1. With the help of multivariate statistical methods and various strategy identification techniques applied in our thesis, it is possible to determine whether *there are any consistent SOs observable in the HPRDS, and if so, how many behavioural patterns can be detected and distinguished* (Lindblom, 1959, Mintzberg-McHugh, 1998).

2. By identifying SOs in HPRDS, *sectoral decision makers get a detailed picture of the differences between strategic-level management features* displayed by pharmacies adapting to environmental changes by developing distinct adaptation patterns.

3. By examining PEU by pharmacists, stakeholders of the sector can get a clear picture regarding *to what extent pharmacies pursuing different SOs find changes experienced in operational conditions and in the behaviour of stakeholders predictable or unpredictable*. Based on our findings decision makers can seek to optimally alter key environmental factors and influence stakeholders' behaviour accordingly.

4. Based on the revealed relationships between M&S's SOs and BP, managerial implications can be drawn *to highlight strategic-level management characteristics that increase BP* under certain environmental conditions.

5. In view of BP implications, *differentiated, "customised" industrial policy decisions can be made and measures can be taken* in order to improve insufficient business knowledge and management competences of pharmacists pursuing different SOs.

6. By the application of various mathematical-statistical methods demonstrated in our dissertation, it is possible to establish *to what extent variance observed in BP of pharmacies can be explained by their SO*, thus enabling us to determine the amount of resources and competencies worth allocating to develop and consistently pursue them.

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7. By exploring the potential moderating effects of PEU and GL on the relationship between SO and BP, we can offer guidelines to pharmacy managers to show *which behavioural characteristics of given SOs contribute to optimal BP within different perceived environmental conditions and various local contexts.*

8. Through the integration of control variables concerning pharmacies' socio-, demographic and site characteristics, *the effect of additional factors (beyond SOs) on pharmacies' BP can also be proven or refuted.*

Having demonstrated the sectoral topicality and relevance of our dissertation, let us present the conceptual model that serves as a basis of our empirical research.

19. The conceptual model of our doctoral research

After reviewing literature on the theoretical implications of M&S's strategic typology, and on the interrelations of SO, PEU, GL and BP, let us direct our attention towards the formulation of the conceptual model of our doctoral dissertation. Besides publications in scientific literature (Jambulingam et al., 2004, Bliss, 2007, Hamilton, 2009), secondary sectoral sources (e.g. reports of HCP) have been also of great assistance in developing our conceptual model aiming the identification of strategic behavioural patterns and exploring their BP implications in the HPRDS (Szabó, 2009, Feller, 2010, Bodrogi et al., 2012, Hankó et al., 2014). Studies and industrial reports published in the pharmaceutical press largely contributed to narrow the scope of our theoretical constructs examined herein. The aforementioned theoretical constructs served as a basis for our main research questions and hypotheses. *The assumed directions and strength of connections between our theoretical constructs, however, to be discussed in chapters 22 and 23 titled "General research questions and hypotheses of our doctoral dissertation"*. What follows here is merely a short, scientific and sector-specific interpretation and summary of the theoretical constructs that constitute our conceptual model.

19.1. Strategic orientation

During the analysis of strategic literature and the processing of the secondary sources of HPRDS, we were attempting to identify factors that may actually determine the effectiveness and efficiency of pharmacy management. Even though the performance of enterprises of the sector are mostly determined by systemic variables, recently – in order to counterbalance unfavourable macroeconomic conditions and healthcare policy measures, and to utilise favourable ones – *the role of conscious, strategic, micro-level pharmacy management has become increasingly important.*

Previous studies inspecting the sector have led to the conclusion that most domestic pharmacies do not possess a consistent strategic orientation required for successful environmental adaptation, however, *most pharmacists have recognised its necessity and have taken initiative in order to achieve it.* Literature has also taken notice of the underdeveloped strategic consciousness of micro and small enterprises (Jambulingam et al., 2005, Olson et al., 2005). *However, it also often points out that the adoption of a consistent adaptation pattern*

can help improve the BP of similar organisations significantly (Jelen, 1995, Vecsenyi-Kovach, 1996, Gimenez, 2000, Aragón-Sanchez – Sanchez-Marín, 2005). Thus, the central theoretical construct of our research is focused on the SOs of M&S – Prospectors, Analysers, Defenders and Reactors – which we attempt to identify in the context of HPRDS featuring bureaucratic coordination mechanisms and limited competitive intensity, and exhibiting the microeconomic characteristics of both public and private goods.

19.2. Business performance

Perhaps the most frequently examined interrelation of strategic management literature is the stochastic relationship between SO and BP (Chakravarthy, 1986, Buzzell-Gale, 1987, Ketchen et al., 1997, Jennings et al., 2003). *Thus, the most important dependent variables of our dissertation imply the BP indices regarding market effectiveness and financial profitability.* We intend to answer the question of what influence the prevalence of Prospector, Analyser, Defender, and Reactor SOs may exert on the development of SAL and NP of pharmacies (Hambrick, 1983, Parnell-Wright, 1993, Moore, 2005, Helmig et al., 2014).

19.3. Perceived environmental uncertainty

An important objective of our dissertation is to explore the potential moderating effect of PEU by pharmacy managers on the relationship between SOs of M&S and BP of pharmacies. The integration of PEU as a potential moderating construct can be regarded as plausible, *since its development is not an unalterable, fix factor, but rather it is based on the pharmacy manager's subjective perceptions pertaining to the conditions of the market, pharmaceutical and legal environments as well as the behaviour of key stakeholders of HPRDS*, thus it may change and is changeable (Ireland et al., 1987, Miller, 1993, Frishammar, 2006). On the basis of secondary sectoral sources, we assume that the effect Prospector, Analyser, Defender, and Reactor SOs have on BP varies depending on the degree of PEU by pharmacy managers (Mitev-Bauer, 2008a, b, c, Csepeti, 2014b).

19.4. Geographical location

Based on the inspirations gained from strategic management literature (Kean et al., 1998, Sun-Wu, 2004, Velayudham, 2007) and sectoral observations made in the qualitative stage of our research presented later, GL of pharmacies as a variable – similarly to PEU – has been integrated as a potential moderating factor, not as a control variable. *Our decision was justified by results of in-depth interviews* we conducted with wide-ranging stakeholders of HPRDS, especially with pharmacy managers, colleagues of the HCP, and wholesaler's representatives. According to interviewees, *M&S's SOs can manifest in various content and process elements, depending on the GL of pharmacies.* Likewise, the *BP of such business entities* of this sector typically featured by bureaucratic coordination mechanisms and limited competitive intensity *is strongly determined by the settlement where the pharmacy is located* (Bliss, Desselle-Zgarrick, 2004, Bliss, 2007, Csepeti, 2014a). Therefore, if we presume that GL of pharmacies is in correlation with their SO and BP, then it is logical to integrate GL as a factor having a potential moderating effect on the relationship of SO and BP (Sharma, 1981, Prescott, 1986). Empirical findings supporting our decision are listed in subchapter 21.2.5.

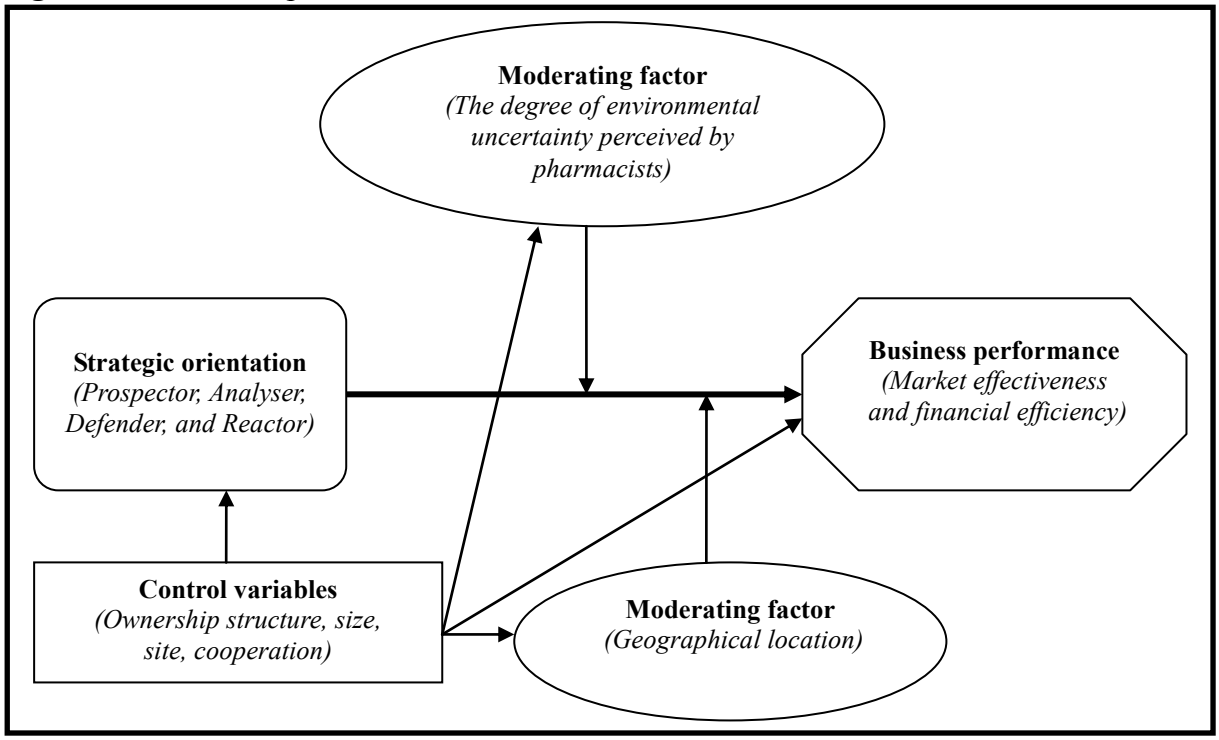
19.5. Control variables

In the light of the statistics of HCP (Bodrogi et al., 2010) and other industrial research

programmes (Bliss, 2007), *it is apparent that BP of pharmacies is heavily influenced by factors such as the facilities of company site* (e.g. distance from hospitals, clinics or physicians' offices, location in a shopping mall, number of passers-by etc.), the size of the pharmacy (total area of space, area of the officina, number of employees), the ownership structure (having legal personality or not), and participation in various horizontal and/or vertical forms of cooperation (chains, franchise-type cooperations, procurement associations).

Accordingly, in our research on the relationship between M&S's SO and BP of pharmacies, the aforementioned factors have been integrated into our conceptual model as control variables. Control variables 1) *show whether the empirical findings regarding the relationship between SO and BP prove to be robust* even if we filter the effects of these factors, 2) *shed light on additional factors that contribute to the explanation of variance experienced in BP* of these pharmacies. Based on the above interrelations, we elaborated the conceptual model of our research, which can be seen on Figure VI.

Figure VI: The conceptual model of our doctoral research



Source: Figure made by the author

20. Operationalisation of theoretical constructs examined in the Ph.D. research

Hereafter, we present the operationalisation of 4 of our most important theoretical constructs – SO, BP, PEU and GL. It is important to note that *we have made a number of sector-specific modifications on the content and formal elements of measurement instruments* that were chosen on the basis of relevant international literature, in order to ensure greater levels of validity and reliability. The details of these refinements, namely the results of preliminary tests concerning the development processes of measurement tools, are to be listed in Chapter 21, along with the presentation of the conclusions drawn from in-depth interviews with influential stakeholders of the HPRDS. The validity and reliability results, as well as the potential fit of the original factor structure of Segev's (1989) multi-item scale identifying

M&S's SOs and multi-item PEU scale of M&S (1978) – tailor-made for the specific attributes of the sector and its stakeholders based on in-depth interviews conducted with pharmacists – is to be discussed in detail in Chapters 27-30.

20.1. The identification of strategic orientations

In listing the shortcomings of the strategic research of M&S, we have already emphasised that the combined use of multiple strategy identification techniques is needed in order to ensure a more robust reliability and validity of the strategic typology. Consequently, we apply three, internationally acclaimed extraction methods in our Ph.D. research, the concept of which is illustrated in Figure VII. These are 1) *a multi-item scale developed by Segev (1987)*, 2) the most popular, *"self-typing paragraph method"* alternative (McKee et al., 1989, Vorhies-Morgan, 2003), and 3) *the method of objective indicators* (Snow-Hambrick, 1980). The relevance of described strategic extraction methods has also been confirmed by statistical tests in past international research (James-Hatten, 1995, Moore, 2005).

20.1.1. Self-typing Paragraph Method

In self-typing paragraph method *we asked pharmacy managers to choose one among the definitions of M&S's SOs drafted in one extended sentence or short paragraph that describes best the adaptation pattern their pharmacy exhibits* (Snow-Hrebiniak, 1980, James-Hatten, 1995, Slater-Olson, 2000, 2001). Table XX. contains the English-language definitions of the Prospector, Analyser, Defender, and Reactor SOs previously used in international research, as well as Hungarian translations produced by translators specialised in economics and researchers with an expertise in strategic management literature. *The final version of SOs including sector-specific modifications in content and formal elements* (Table XXV) is presented at the pre-tests concerning validity and reliability carried out during in-depth interviews conducted with pharmacy managers in Chapter 21.2.1.

20.1.2. Segev's multi-item scale

Multi-item scale of Segev, which has been recognised in various international research, and also proved valid and reliable, asks pharmacists to evaluate the behavioural characteristics – particularly those shown in dealing with the entrepreneurial problem – of Prospector, Analyser, Defender, and Reactor SOs. *Pharmacy managers' responses have been recorded in a metric, five-point Likert scale, where value 1 stood for the given behavioural pattern does not suit the pharmacy at all, while value 5 meant that it is absolutely suits the pharmacy* (Dyer-Strong, 1997, Moore, 2005, DeSarbo et al., 2005, 2006). The use of metric scales provided an excellent opportunity for the application of sophisticated mathematical-statistical analyses – e.g. confirmatory factor analysis (CFA), structural equation modelling (SEM) – the results of which may be considered as the most important methodological elements of our theis. The original version of Segev's scale identifying M&S's SOs can be found in Table XXI, while its sector-specific adaptation in Hungarian is presented in Table XXIV.

20.1.3. The method of objective indicators

The method of objective indicators applicable to the identification of M&S's SOs is a technique based on indices concerning accounting or other functional fields of management. We were intending to detect indicators that can potentially be used for the observation of Prospectors, Analysers, Defenders and Reactors, based on the implications of strategic

management literature, and our "a priori" experiences regarding HPRDS. *We attempted to find such sector-specific indicators that can be connected to the central construct of the strategic theory of M&S, the adaptation cycle.* We have selected several indices tested in in-depth interviews with pharmacists to measure the different width and depth of product and service portfolios associated to certain SOs, and the varying degrees to which these portfolios are modified by pharmacy managers (Chapter 21.2.3.).

20.1.4. Classification method

In order to identify the SO of pharmacies, for each technique we employed different guidelines widely used in international research (Conant et al., 1990, Helmig et al., 2014). *In the case of self-typing paragraph method, which is considered to be a nominal measurement tool*, classification is the easiest task, since pharmacy managers had to choose only one paragraph which describes the SO that fits best the behavioural pattern displayed in environmental adaptation by their enterprise. *Segev's multi-item scale is a metric measurement tool*, in which the weighted average of the evaluations of behavioural characteristics (items) belonging to each SO were compared, on the basis of which we could determine whether responding pharmacies pursue either Prospector, Analyser, Defender, or Reactor SOs (Segev, 1987). *The method of objective indicators* is, also a metric measurement instrument, which, according to the theoretical guidelines classifies enterprises into M&S's SOs with quartiles made up on the basis of evaluations concerning the breadth, depth and the alteration rate in the composition of the product and service portfolio.

The final classification of companies, combining the results of all three strategy extraction techniques, can be made based on the majority rule (3:0, 2:1). *If these three techniques identified three different SOs, then – in the absence of Reactor among the results (that is, in case of P, A, D) – the pharmacy is classified as an Analyser, while if one of the classification results is a Reactor, it is categorised as such* (Conant et al., 1990). The validity and reliability of measurement instruments have been tested according to the standard recommendations of methodological literature (Campbell-Fiske, 1959, Churchill, 1979, Anderson-Gerbing, 1988), while the extent of concordance among the results obtained by various identification techniques and especially concerning the distribution ratio (%) of M&S's SOs in HPRDS have been verified with the help of statistical tests (Chapter 32).

20.2. The operationalisation of perceived environmental uncertainty

According to strategic management literature, *certain groups of firms perceive dynamic environmental changes as business opportunities, while others regard environmental turbulence as a constant source of uncertainty and threat* (Lawrence-Lorsch, 1967, Duncan, 1972). We have to note, that during the selection of measurement instruments for the evaluation of the environment of HPRDS, priority was rather given to academic requirements. Consequently, we introduced multi-item PEU-scale developed by Miles and Snow (1978) into our survey in order to reveal complex relationships between environment, SO, GL and BP. Since the strategic typology of the authors serve as the central theoretical construct of our doctoral research, for its operationalisation, *it seemed appropriate to choose a measurement tool that is rooted in the same theory,* from a lot of several possible quantitative approaches of PEU (Milliken, 1987, Dess-Rasheed, 1991, Miller, 1993). Our decision is supported by the fact that the validity and reliability of the aforementioned scale has been confirmed by numerous outstanding international studies (Namiki, 1989, Buchko, 1994).

Another supporting methodological argument for the application of M&S's PEU scale is that, according to previous research, it has a confirmatory factor structure, so can be integrated into structural models (SEM), thus it allows us to draw sophisticated conclusions regarding the relationship of *"environment-strategy-performance"*. The PEU scale of M&S quantifies the degree of perceived changes in the behavioural aspects of certain stakeholders (e.g. suppliers, competitors, regulatory authorities) based on the subjective evaluation of pharmacy managers (Priem et al., 2002). *The answers were recorded on a five-point Likert-scale, where value 1 stood for complete unpredictability, while value 5 represented complete predictability.* M&S's PEU scale featured in our survey data collection is presented in Table XXVI.

20.3. Geographical location

The operationalisation of the GL of pharmacies has been adapted to the general practice of the Hungarian Central Statistical Office and the sector-specific guidelines of HCP. In our survey data collection, GL of Hungarian public pharmacies has been recorded on an ordinal scale based on the number of inhabitants of the settlement where they were operating. Responding pharmacy managers had to choose one out of five alternatives to indicate clearly the population of the settlement where their pharmacy was located. The possible answers were the following: *1) Budapest, 2) city with population over 50.000 3) city with between 10.000 and 50.000 inhabitants 4) township with a population between 5000 and 10.000 5) settlement with inhabitants under 5000.* The categorisation was deemed appropriate, since, according *to the in-depth interviews made with stakeholders of the HPRDS, there are significant differences between the SO and BP of pharmacies located in settlements with different sized populations.* The possible response alternatives listed in the survey covered the total possible population of pharmacies and they have proven to be mutually exclusive.

20.4. Business performance

When operationalising BP of pharmacies, *our intention was to use indicators concerning market effectiveness and financial profitability alike.* The most relevant and measurable BP indicators in pharmacy management are the following: average monthly sales, annual sales, average realised price margin (%), average monthly gross margin, annual realised gross margin, NP, ROS (Return on Sales), the stock of short and long term liabilities, structure of expenditures (e.g. staff and material costs, overheads, depreciation), etc. (Carroll, 2006, Pillittere-Dugan, 2009). It is worth mentioning that, as a result of tensions in the sector during the past few years, pharmacists tend to be mistrustful in sharing relevant and sensitive data, thus, during our in-depth interviews, besides the use of objective BP indicators, we questioned interviewees about the possibilities of the application of subjective BP indicators compared to sectoral average and/or main competitors, operationalised on a Likert-scale. In spite of the distrust, *we decided to ask for concrete, quantifiable BP indicators in our final survey, among which we focused on annual net SAL (market effectiveness), and NP (financial profitability)* in our statistical analyses. The measurement instruments applied for the operationalisation of the four main theoretical constructs of our dissertation – the SOs of M&S, BP, PEU and GL – are summarised in Table XXVII.

Table XXVII: Operationalisation of theoretical constructs examined in empirical research

Construct	Measurement methods	Measurement scale	Indicators and units of measurement
Miles and Snow's Strategic Orientation	Self-typing paragraph method	Nominal	A) Prospector, B) Defender, C) Analyser, D) Reactor
	Multi-item scale of Segev (1987) (4 dimensions, 29 items)	Metric	1-5 points Likert-scale (not at all suits…absolutely suits to the environmental adaptation behaviour of the pharmacy)
	Method of objective indicators	Ratio	1) Rx., OTC and other products in Sales (%) 2) Rx., OTC and others (%) in absolute gross margin 3) Average amount of stock from Rx., OTC, others (day) 4) Pharmacist and lifestyle-related services (piece) 5) Revenue from pharmacist and lifestyle-related services
Business Performance	Objective, indicator of accounting performance	Ratio	Market effectiveness: Net sales revenues (million HUF)
	Objective, indicator of accounting performance	Ratio	Financial efficiency: Net profit (after tax) (million HUF)
Perceived Environmental Uncertainty	Miles and Snow's perceived environmental uncertainty multi-item scale (1978) (7 dimensions, 45 items)	Metric	1-5 points Likert-scale (completely unpredictable…completely predictable: the behaviour of wholesalers, producers, patients, competitor pharmacies, regulatory authorities, HCP and changes in financial conditions)
Geographical Location	Harmonisation of the settlement registers of Hungarian Central Statistical Office (HCSO) and the Hungarian Chamber of Pharmacists (HCP)	Ordinal	Based on population size: 1) Budapest, 2) city, where more than 50 thousand people live, 3) city where 10-50 thousand people live, 4) township with 5-10 thousand people 5) settlement with less than 5 thousand people

Source: Table made by the author

21. The qualitative phase of the primary research

After presenting the measurement tools used for the operationalisation of constructs, we turn our attention towards the introduction of the empirical stage of our dissertation. Preceding the detailed presentation of the objectives of various qualitative and quantitative techniques and the logical link between their content elements, for easier interpretation, *the primary and secondary techniques employed in our research have been summarised in Table XXVIII.* In the *qualitative* stage of our research, we conducted a large number (approx. 30) of "semi-structured" and unstructured in-depth interviews with the representatives of a wide range of

stakeholder groups of HPRDS. Among the interviewees, there were pharmacy managers, leaders of advocacies of pharmacists, wholesaler associates, representatives of producers, pharmacy visiting agents, NHIFH representatives, general practitioners, physicians-specialists, private health fund associates, managers of nursing homes, and of course, patients.

The interviews conducted with the stakeholders of HPRDS served the following purposes:

- Understanding of the various changes and trends ongoing in the environment of HPRDS
- Get acquainted with the stakeholders and their interests present within the sector
- Mastering the linguistic peculiarities of pharmacists' profession
- Exploring the strategic behaviour and the characteristics and procedures of pharmacy management processes, and revealing factors determining BP
- Refining the conceptual model of our doctoral research
- Composing and refining the scales and other measurement tools applied in the quantitative stage of our research for the operationalisation of the major theoretical constructs

In the light of the fact that our dissertation has to meet a number of strict methodological requirements, *in the qualitative phase of our research the main focus was on the last of the aforementioned objectives, the development and perfection of measurement tools used in for appropriate operationalisation of theoretical constructs.* Consequently, during our in-depth interviews with sectoral representatives, especially with practicing pharmacy managers, we *dealt in detail with the operationalisation methods of the four main theoretical constructs of our research: SO, PEU, BP and GL.* In the following chapters, we highlight the essential steps in the process of development, modification and sector-specific customisation of our measurement tools such as the self-typing paragraph method, Segev's multi-item scale, and Miles and Snow's PEU scale, as well as the BP indicators concerning market effectiveness and financial profitability of pharmacies.

Table XXVIII: Overview of the main sections of the doctoral research, their objectives and applied methodologies

	Research methodology	Objectives of the research	Sources	Schedule
SECONDARY	Literature review	Circumscription of the construct of strategy and introduction to the development of strategic management	International and domestic academic journals and economic textbooks	September 2009 – November 2011
		Review of the strategic typology developed by Miles and Snow		
		The approach of business performance in the strategic management discipline		
		Conceptualisation of PEU and GL and the introduction of their relationship to BP and SO		March 2011 – October 2012
		The micro-economic and strategic characteristics of private and public goods		
		Recognition of ongoing economic and legal processes of HPRDS and exploration of actual pharmacy management challenges	Industry-specific press (e.g. Pharmacists' News)	March 2011 – March 2015
PRIMARY	Qualitative expert interviews	Perception of changes in the trends and environment of HPRDS	Cca. 30 interviews (pharmacists, wholesalers, producers, patients, pharmacy visitors, representatives of advocacies, NHIF officials, physicians, private health funds, nursing homes etc.)	September 2010 – June 2011
		Getting deep acquaintance with the key sectoral stakeholders and their interests		
		Acquirement of the linguistic peculiarities of pharmacists' profession		
		Revealing the strategic behaviour, operation mechanisms and management processes of pharmacies, as well as the detailed exploration of influential factors on pharmacies' BP		
		Finalisation of the conceptual model of our doctoral research	Pharmacy managers, representatives of HCP, strategic management researchers and English-Hungarian economic translators	July 2011– November 2011
		Pretesting the validity, reliability, dimensionality and finalisation of the measurement instruments applied in survey research		March 2012 – September 2012
		Ex-post discussion of the results, consequences and limitations of the dissertation		October – December 2014
	Survey data collection	Identification of the observable SOs in HPRDS	207 responses of pharmacy managers from Budapest and Pest, Baranya, BAZ, Vas counties	October 2012 – June 2013
		Evaluation of the convergent validity of applied strategy extraction methods		
		Definition of the relative distribution of M&S's SOs identified in HPRDS		
		The examination of contingency theory's „environmental determinism" and John Child's „managerial choice" approaches in the context of interactions between SO and PEU		
		Quantification of the stochastic relationship between M&S's SOs and BP		
		Revealing the potential moderating effects of PEU and GL in the relationship between SO and BP		
		Evaluation of the robustness of the identified interrelations between SO and BP		

Source: Table made by the author

21.1. The development process of the applied measurement instruments

The selection of well-defined, theoretically grounded constructs, and their adjustment to the specificities of the industrial context, is an essential prerequisite of high-level quality research projects. This is mainly because quality of the operationalisation following the conceptualisation of the constructs determines the extent to which measurement tools used in empirical examination prove to be valid and reliable (Churchill, 1979, Rossiter, 2002). *It has to be emphasised that in the case of our research, this process did not imply the development of brand new scales, but rather the modification of the formal and content elements of measurement tools adapted from international literature, adapting its items to local, sector-specific conditions* (Anderson-Gerbing, 1982). Refining the measurement tools took up several months, and involved excessive consultation in the qualitative phase of the research. In the next chapter, we present the results of the pre-tests, the basis on which we slightly altered the items of the Segev and M&S's PEU scales, and the descriptions of self-typing paragraph method (Bailey et al., 2000).

21.1.1. Exploring multi-item scales and other measurement instruments

Based on the processed literature on strategic management and marketing strategy, we collected measurement tools that are capable of the identification of M&S's SOs and the operationalisation of the environmental uncertainty perceived by pharmacists, and have been applied successfully in previous empirical research (Duncan, 1972, Miles-Snow, 1978, Milliken, 1987, Buchko, 1994, Slater et al, 2005). Based on the in-depth interviews conducted with domestic and international researchers with an expertise in strategic management, as well as leaders of pharmacists' advocacies within the sector, *we have selected measurement instruments that – regarding the relevance of their semantic and content elements – best fit key stakeholders' (pharmacy managers) requirements* involved in the study.

21.1.2. Generating additional scale items

We have also gathered some scale items from among the measurement tools that were not used in the empirical phase of our research (e.g. the scale of Conant et al. from 1990), *the integration of which was necessary in order to assure the highest possible degree of validity and reliability* (Sureshchandar et al., 2002). With the help of domestic and foreign professors, pharmacists and chamber leaders, we have selected additional scale items that help formulate statements that cover the most important theoretical and strategic aspects of a given construct also from the practical perspective of pharmacy operation as well.

21.1.3. Linguistic formulation of content and formal elements of measurement tools

Several studies draw attention to the face validity of measurement instruments, since the linguistic deficits of multi-item scales can exert a great influence upon the mathematically and statistically quantified validity and reliability values of the constructs (Parasuraman et al., 1991). *During the process, which methodological literature simply calls "translation-back translation", we have cooperated with two specialised lectors from the field of economy.* The linguistic adaptation of measurement tools took place in three steps. First, with the help of one of the translators, we transferred the vocabulary of the original versions of PEU scale (1978) and the Segev-scale (1987) indentifying M&S's SOs into Hungarian.

After that, the other translator specialised on business administration translated back the

vocabulary of the Hungarian-language measurement tools into English, and then the reasons behind the discrepancies identified when comparing the original vocabulary and the one translated back into English were discussed in the presence of both translators (Brislin, 1970). After reaching a consensus, in cooperation with the translators, we have created the Hungarian-language "prototypes" of the measurement instruments forming the backbone of the pre-tests conducted with strategic management researchers, sectoral professionals, and pharmacy managers. Finally, *the "translation-back translation" method was used again for incorporating the ex-post linguistic observations of the interviewees in order to optimally customised our survey* applied in the process of large-sample data collection.

21.1.4. Pre-testing dimensionality and reliability

In order to maximise construct validity, next we had to refine the scales that were chosen and completed with additional items. It was important to correct ambiguous phrases, as well as to modify, replace or eliminate scale items that, in terms of formal and content elements, were not perceived coherent with the theoretically appropriate scientific construct by potential respondent pharmacists (Anderson-Gerbing, 1982, Ahire et al., 1995). *During the course of the pre-test procedure, we have personally consulted with nine pharmacy managers, and six leaders of the HCP.*

The in-depth interviews begun with the pre-validity and pre-reliability procedures elaborated by Davis (1986), *first we presented in detail the main constructs of our survey – M&S's SOs, PEU, GL and BP – from the point of view of strategic management theory*. Afterwards, the interviewees have been introduced to the latent constructs of SO and PEU, and the manifest scale items attached to them. After they were familiarised with the key concepts and the definitions of the dimensions and items, *we went on to pre-testing the dimensionality and reliability of the constructs by the application of a special card task* (Gwet, 2014).

The essence of the card task can be summarised as follows: *the interviewees were asked to assign randomly mixed statements from the scales to the appropriate scientific constructs they were already familiar with* (Ahire et al., 1995, Bergkvist-Rossiter, 2007). The results of the task have given us an insight on the extent to which potential respondents of the survey are able to assign randomly presented scale items to the theoretically appropriate constructs. As far as the convergence and divergence in the ratings of participants are concerned, we note that degree of fit of constructs and the items assigned to them were evaluated with the calculation of the inter-rater reliability index (Saal et al., 1980).

21.1.5. The finalisation of measurement instruments

In light of the results of the card tasks, we eliminated scale items that were frequently incorrectly classified by participants of the pre-tests, and we deleted or refined any inconsistent or ambiguous phrasing, and also merged few scale items (Bailey et al., 2000). *After conducting the mostly qualitative pre-tests on dimensionality, reliability and validity we have come to the end of the finalisation process of the questionnaire used in the large-sample data collection.* The key theoretical aspects and methodological results of the pre-tests of the main measurement instruments are listed in the following chapter.

21.2. The most important results of the pre-tests

21.2.1. Segev's multi-item scale operationalising M&S's SOs

From methodological point of view, the Segev scale has proven to be an ideal choice, but some of the substantive content and formal elements of the Conant et al. (1990) scale, which is an alternative to the Segev scale in international research, have also been integrated (Sureshchandar et al., 2002, Helmig et al., 2014). *The Segev scale was refined and completed with the relevant elements of the Conant et al. scale (1990) according to the scientific standards* (Churchill, 1979, Nunally, 1988). *We have to emphasise that these modifications* – proposed by sectoral stakeholders, strategic management researchers, and English translators specialised on economics – *did not change the original structure of the Segev scale, all 29 statements have been preserved*, the items were merely refined to a minimal extent with regards to their formal and content elements to meet industry-specific requirements.

The adoption and adaptation of certain elements of the phrasing in the Conant et al. (1990) scale to the Hungarian version of the Segev scale is illustrated in Table XXII. Table XXIII presents *the scale items which* – in order to preserve the dimensionality of the original scale – *required minimal modifications in their formal and/or content elements* based on the conclusions drawn from our interviews with pharmacists.

In the case of the operationalisation of the Prospector, Analyser, Defender and Reactor SOs, the content elements of the scale items were deemed consistent with the theory of M&S by the professionals questioned. We highlighted two statements, in case of which even strategic management professionals were unsure whether they can be considered typical of the given SOs. These were the following: *"The effort our pharmacy puts into the introduction of new products and services often does not prove to be profitable."(P)* and *"In recent years, our pharmacy was aiming at developing a range of products and services that meet patients' requirements"(R).*

According to the professionals we questioned, the first statement is not exclusively a characteristic of the Prospector SO, since it can appear in the case of any of M&S's SOs. Moreover, despite our theoretical accuracy a single word "profitability" had to be explained in detail, *since pharmacists questioned could not automatically distinguish between the two concepts of "effectiveness" and "efficiency".* The second statement referring to the Reactor SO failed to verbalise to an appropriate extent the inconsistent, "flustered" behaviour managers exhibit in developing their product and service portfolio. Consequently, we made the following modifications regarding the aforementioned statements: *"It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable" (P)* and *"In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients (R)*

Regarding the formal aspects of the statements, only a few modifications were suggested, mostly because of unclear translations. One example was the expression *"product or range of products"*, the definition of which in the tertiary sector includes services as well, however, according to the experiences of researchers, this would not be clear for those respondents of the survey who do not possess the appropriate background knowledge in the field of economics. Thus, we used the term *"product and service portfolio"* consequently in the final version of the questionnaire. There was another refinement concerning translation in one of the statements about Reactors: instead of *"Our pharmacy is often compelled to act under direct pressure from market and legislative environment",* we wrote of *"Our pharmacy often acts upon the direct pressures of the market and regulatory environments"*, since the first

phrasing was too rigorous and exaggerated, and it questioned the firm's independence and capacity to act on its own.

Apparently, in case of the card tasks conducted with pharmacy managers and strategic management researchers, it was the correct classification of scale items pertaining to Reactor SO that proved to be the most difficult and problematic. According to their opinion, the characteristics of the Reactor SO can appear in the cases of Prospector, Analyser and Defender pharmacies as well. *Based on the inconsistencies noticed during the pre-test phase, we predicted a number of validity, reliability and dimensionality concerns regarding the behavioural characteristics of Reactor SO*, which will be presented in detail in the mathematical-statistical analyses performed after the survey. Based on the results of the card tasks aiming at matching scale items to SOs, *the behavioural attributes of Defender SO were the most clearly phrased ones.* Based on all the aforementioned sections, *the final version of the Segev-scale identifying M&S's SOs can be found in Table XXIV.*

21.2.2. The self-typing paragraph method

The paragraphs – phrased with the help of researchers proficient in the theoretical implications of M&S's typology, English translators specialised on economics and practicing pharmacy managers – were modified based on the qualitative in-depth interviews made with pharmacy managers. *These modifications were mostly sector-specific, and were connected to resources, competences and strategic management processes unique to or better characterising the operation of micro and small enterprises* (McGee-Patterson, 2000). In order to increase face and content validity of statements describing Prospector, Analyser, Defender and Reactor SOs, we have phrased them according to the professional vocabulary used by pharmacists. During survey data collection, pharmacists had to select one out of the descriptions of M&S's SOs – as presented in Table XXV – that best applied to the environmental adaptation behaviour of their pharmacy. We did not include the names of SOs, and referred to them as strategies A, B, C, and D instead. It is important to note that during the pre-tests, *pharmacists had no difficulties in classifying their pharmacy as either Prospector, Analyser, Defender or Reactor*, based on the final descriptions of SOs (James-Hatten, 1995).

21.2.3. The method of objective indicators

Based on the interviews with pharmacy managers *the following indicators related to pharmacy management were integrated into our survey* in order to help identify the SOs:

- The relative percentage of prescription (Rx.), OTC, and other products in annual SAL
- The relative percentage of the aforementioned categories in annual realised gross margin
- The average size of stock of these categories in the pharmacy (day)
- The annual SAL of the pharmacy from pharmaceutical, healthcare and lifestyle services
- The number of pharmaceutical, healthcare and lifestyle services offered by the pharmacy

According to the theoretical guidelines of M&S*, mostly based on indicators referring to the range of the product and service portfolio, we attempted to identify the Prospector, Analyser, Defender and Reactor pharmacies* (Snow-Hambrick, 1980, Hawes-Crittenden, 1980, McDaniel-Kolari, 1987). *We divided the results for each indicator into quartiles.* Based on the evaluation of pharmacy managers, pharmacies that fall into the highest quartile are considered to be Prospectors, the ones that fall into the second one are Analysers, the ones in the third one are Defenders, while the ones that fall into the last quartile are classified to be Reactors.

21.2.4. The perceived environmental uncertainty scale of Miles and Snow

Relying on the unanimous opinion of pharmacists questioned, a new dimension was inserted into the PEU scale in addition to the six constructs found in the original measurement instrument. According to pharmacists, beside items pertaining to the behaviour of sector-specific stakeholders, *statements regarding general financial conditions, and the financial terms of pharmacy management were missing*. In their view, the development of e.g. the rental fees of pharmacies operated in a rented location, overhead expenses, the costs of employment, or the interest rates of loans on working capital are *all factors that the (un)predictability of which determine the strategic possibilities of a pharmacy to a great extent.* Naturally, the reduction of the scope of scale items regarding the set of financial conditions of pharmacy management, as well as the finalisation of their content and linguistic elements, *all were carried out with the involvement of practicing pharmacy managers.*

Trade unions, featured in the original M&S's PEU scale as external stakeholders, were modified. The reason for modification was that there are no trade unions operating in HPRDS, while there are several other professional advocacies influencing the mechanisms of the sector. The most significant one is the Hungarian Chamber of Pharmacists, which is licensed as a public body, and the membership of which – in light of a parliamentary resolution pertaining to the obligatory HCP membership of professionals – equals the total population of Hungarian pharmacists (Zalai, 2011). *Consequently, instead of the dimension of associated originally to trade unions, the HCP, which assisted us with our research, was integrated into the survey.* Our decision is supported by the fact that the sectoral policy proposals of HCP are the ones that frequently reach legislative bodies. Thus the operation of HCP has a great effect on professional, management and ethical aspects of pharmacy operation. The finalisation of statements concerning the level of (un)predictability regarding the activities of HCP was discussed with pharmacists and leaders of the chamber at a special "research forum".

Pharmacists reported difficulties with the interpretation of one of the constructs of PEU scale *(competitors)*, and problems regarding the dimensionality of another factor *(financial conditions)*. The most ambivalent construct of the PEU scale was the one which exhibited statements concerning the behaviour of competitor pharmacies. Most pharmacists simply suggested deleting the construct, since they believed that most pharmacies have no local competitors. Even if they have, they do not monitor them consciously, and even if they did, they would only gain limited insight to the management procedures of competitor pharmacies.

Adopting rather scientific point of view, we have included the statements about competitors in the quantitative survey, even if this was against the suggestions of pharmacists, since after the liberalisation, the geographical and demographical limitations on the placement of pharmacies – due to the opened legal "loopholes" – have practically disappeared. This, along with a stagnant market volume, led to the intensification of competition. An existential struggle has erupted between urban pharmacies that were too close to one another, while pharmacies in the cities have attracted patients of those operating in small villages.

After processing and discussing the results of the card tasks, *we have noticed a divergence in the classification of the items regarding the effect of environmental uncertainty perceived in the development of financial conditions*, as most participants have assigned the statements into two groups. The first four statements – short-term loans (e.g. for working capital), long-term loans (e.g. for development), the fluctuation of interest rates, exchange rates – formed one of the groups, while the another four items – the evolution of terms of payment,

deadlines, labour costs of pharmacy employees, fluctuation of rental fees and overhead expenses – have been sorted into another cluster.

According to the pharmacists, the reason behind this is that the first four statements are in connection with changes concerning the macro factors that are less relevant to them, while the second cluster of phrases refer to everyday aspects of pharmacy management. *In spite of all this, we again decided to include the all the eight scale items into the same dimension*, since splitting the construct into two during the EFA of CFA analyses later on would not make the interpretation of the statements any more difficult or "risky" neither from a theoretical, nor from a sectoral point of view.

In order to increase face validity, pharmacy managers and scholars proficient in strategic management have both *suggested the modification of the terms "buyer" and "customer" to "patient"*. The main reason for this is that the vocabulary of the competitive market is unfamiliar to most of the pharmacists, and thus many of them would perceive the usage of the word "customer" to describe patients as a sign of "commercialisation", which is irreconcilable with the ethical norms of the sector, degrading the prestige of the pharmacist's profession. We decided to fulfil this demand. The final version of the perceived environmental uncertainty scale, which was used in our survey data collection, appears in Table XXVI.

21.2.5. Geographical location

In the light of various recommendations coming from literature, we have put a great emphasis on the examination of the role of GL in our doctoral research during our interviews with stakeholders of the HPRDS. *Respondents confirmed that GL of pharmacies certainly has an effect on the manifestation of the SO they follow.* In the case of Prospector SO, for example, the expansion of the product and service portfolio can occur at a different pace, depth and width in the context of urban pharmacies, from that of pharmacies operating in rural areas.

Similarly, according to both the secondary sources and the interviewees, *BP of the participants of the HPRDS is largely determined by the type of the settlement where the pharmacy operates* (Bodrogi, 2010, Csepeti, 2014a, Hankó et al., 2014). The experiences of interviewees show that even a consistently implemented SO can not guarantee outstanding BP in case of pharmacies that operate in small villages characterised by unfavorable demand conditions. On the other hand, pharmacies in larger cities can operate in an effective and efficient way even without the conscious development of a consistent pattern of adaptation, since more favourable urban environmental conditions enable this.

Consequently, *it can be predicted that the nature and strength of the effect Prospector, Analyser, Defender and Reactor SOs exert on the BP of pharmacies is different in urban environments than in rural ones.* According to the interviewees, as a result of the contingencial features of the HPRDS, it is not worth filtering the effect of pharmacies' GL when exploring the relationship of SO and BP, since it is exactly the GL variable that can shed light on the possible differences between the consequences of pursuing certain SO regarding the effectiveness and profitability of pharmacies depending on their urban or rural location.

By the reason of the heightened sectoral inquiry, *the GL construct has been integrated into our conceptual and measurement models as a factor moderating the stochastic relationship of SO and BP.* Our decision is supported by the fact that, since the period of pharmacy liberalisation, *the modification of parameters affecting GL of pharmacies has been made*

possible by the concessions connected to the criteria of the foundation of pharmacies. "Investors" (e.g. capital companies, wholesalers) wishing to increase the number of pharmacies they own, the choice of GL and site facilities of their existing and new pharmacies was a cardinal issue, but a large number of rural pharmacies were also attempting to open a new unit in a busy, urban area. *Hence, for managers GL cannot be considered as an unalterable factor in the operation and environmental adaptation of pharmacies,* and thus it cannot be interpreted solely as a control variable even from a methodological point of view.

The measurement instrument which categorises the possible settlements where pharmacies operate on a 5-point ordinal scale, and has been used for the operationalisation of GL, was fully supported by the interviewees to be applied in the survey, but – as it is clear from the aforementioned examples – *they recommended the distinction of "urban" and "rural" areas for the purposes of better data analyses and interpretation.*

21.2.6. Business performance

The vast majority of pharmacists and chamber leaders participating in the qualitative phase of our research agreed that the development of *the most important BP indicators should be surveyed in a quantitative way, striving to specify the concrete value*. The evaluation of the relative BP (compared to sectoral average or to competitor pharmacies) on a Likert-scale, as suggested by strategic management researchers, was rejected, because BP of individual pharmacies is less transparent in this turbulently changing sector full of conflicts of interests. Our interviewees have also claimed that they seldom read sectoral statistics, and not only do they have little to no information on the BP of their competitors, sometimes they find it hard even to identify them.

None of the respondent pharmacists had difficulties in determining SAL – which is considered the most important dependent variable of our research – in the pre-tests. However, a number of pharmacists have noted that when answering the question *regarding NP, survey respondents will probably give the value featured in the account books, instead of the actual one*, and the latter one usually surpasses the former. Pharmacists had to face serious difficulties in distinguishing between relative and gross margins realised on main product categories (Rx., OTC,others), as well as evoking appropriate data (or finding it in a software).

It has been pointed out that pharmacists with insufficient business knowledge and management competences are likely to provide unreliable data on recent BP indicators. Nevertheless, *BP indicators pertaining to effectiveness and profitability were mostly deemed relevant, clear and answerable by pharmacists from the point of view of the doctoral research.* Pharmacists have called our attention to the fact that *as long as issues such as anonymity and strictly confidential data processing are sufficiently stressed in the cover letter*, the willingness of respondents to provide answers to questions related to BP of their pharmacy will also significantly increases (Tourangeau et al., 2000).

22. General research questions of the doctoral dissertation

Following the presentation of the literature-based implications of M&S strategic typology, the HPRDS, the specific practical and microeconomic characteristics of pharmacy management and the development processes of our measurement instruments, *we formulated the research questions of our doctoral dissertation.*

22.1. Relevance of the M&S typology and the prevalence of its strategic orientations

The relevance of the M&S typology has been examined predominantly within various industries of the US, but Prospector, Analyser, Defender and Reactor SOs have been successfully identified also for example in Great-Britain, Australia, Canada, Japan, Portugal and Brazil. Following the recommendation of Hambrick (2003) – although the typology is widely used and is proved to be able to forecast the BP – *its validity, reliability and generalisability requires constant inquiry.* This is especially true if it is examined in an unconventional environment, different from the one in the US – for example in a relatively small market characterised by limited competition intensity and majority of micro-enterprises. *The priority of our research is to test the M&S classification in a sector characterised by strong bureaucratic coordination mechanisms.*

The environment of HPRDS has been characterised by radical changes in the past years. *To this turbulence even stakeholders entering the market during the ethical era reacted differently,* interpreted changes made by the legislation in different ways and *each of them formulated heterogeneous strategic approaches.* The liberalisation of the pharmacies offered a possibility to several hundred new market entrants to carve out a part of the market for themselves, *so this group viewed these changes also differently* – mostly in a positive light – and initiated an intensive expansion. *The recent ethical restoration processes, the system-wide transformations, the behaviour of the stakeholders and the unpredictability of the environmental conditions provoke wildly varied reactions from the pharmacists*, so their answer is also featured by a variety of business policies reflecting to the new challenges.

During the mid-2000s, when pharmacies constituted a more or less monolith, homogenious block from a strategic point of view, *due to the liberialisation and the intensifying degree of competition we have witnessed a significant divergence in their management behaviour.* Based on theoretical implications, drastically changed environmental conditions forced homogenious strategic behavioural patterns to disappear in a turbulent rate. According to the interviews conducted with representatives of key sectoral stakeholders, *the broadening of the legal and business „playfield" opened up the possibility of numerous SOs for pharmacies to pursue.* So in our first research question (Q1) we examined the following:

Q1:	According to the environmental adaptation behaviour of pharmacies, **can we observe all the original SOs of M&S** (Prospectors, Analysers, Defenders and Reactors) in the HPRDS?

As one of the main consequence of the liberalisation process between 2006 and 2011 can be considered *the increased degree of competitive intensity* in the HPRDS. The urge for better performance and existential struggle induced by stagnating market volumes *revalorised the role of classical management functions.* In certain areas of pharmacy management (like inventory management or marketing activities) the effective and efficient performance of the arising tactical and operative level tasks necessitated a well-grounded strategic positioning, situation analysis and entrepreneurial approach. *Pharmacy managers* assessing the external market, pharmaceutical and legal conditions of the environment and considering their own resources and competencies, *exhibited more and more conscious SOs.*

As a consequence of the abovementioned, *we could identify companies having significantly different strategic approaches* and business practice in regards of pharmaceutical product and service portfolio, segmentation of the patients and positioning of the pharmacy. This process

has not been interrupted by even the ethical restoration after 2011, the prolonging effects of economic downturn and austerity measures of fiscal policy further *developed the strategic consciousness and managerial competencies of pharmacists.* Our second research question (Q2) focused on the stage, which the process of divergence observed in the pharmacies' SOs is. We intended to know that amongst pharmacies pursuing Prospector, Analyser, Defender and Reactor SOs *what kind of different behavioural patterns have been emerged and/or to what extent the management characteristics of the idealtypical SOs of M&S have been mixed.*

Q2: In the HPRDS **whether markedly distinguished, pure SOs or hybrid/mix environmental adaptation patterns** can be identified?

The third research question (Q3) of our doctoral dissertation possesses accentuated importance from an academic perspective, as it concerns the operationalisation of the M&S's SOs. In our research, *to assure robust degrees of validity, we applied 3 strategy identification methods to reveal Prospector, Analyser, Defender and Reactor pharmacies.* This is of paramount importance, hence according to earlier research the number of identified SOs in certain sectors and their relative distribution to each other *significantly differed based on the chosen measurement instruments.*

The previous empirical studies are lacking in the sense that to observe strategic behavioural patterns *they usually applied only one extraction method which thus provided less valid and reliable classification results.* We assume that the combined application of the self-typing paragraph method, the multi item scale of Segev and the method of objective indicators substantially contributes to obtain thoughtful evaluations by respondents regarding the behavioural aspects of the SO pursued by their pharmacies. So *in our Q3 research question we tested convergent validity of various measurement instruments used to identify M&S's SOs in its classical sense* and we examined the following:

Q3: To what extent **distribution ratios** of pharmacies – following Prospector, Defender, Analyser and Reactor SOs identified in HPRDS – **differs based on the classification results of diverse strategy extraction techniques** applied in our research?

22.2. The distribution of the Miles and Snow's strategic orientations and the perception of the operational environment's elements

In the literature review sections of our thesis we already treated the question in detail whether we can find any relationship between the emergence of companies exhibiting various strategic behavioural patterns and the operational environment defined by sector-specific characteristics. We came to the conclusion that *the distribution of Prospectors, Analysers, Defenders and Reactors in the previous studies* – in contrast to the initial observations of M&S – *has shown a various picture.* Research examining the interaction between environment and strategy also pointed out that *the environmental conditions do not affect companies' SO in their pure, objective form, but rather through the filter of managers.* The subjective and different perception of environmental conditions and stakeholders' behaviour by managers can lead to the situation where *they interpret similar sectoral contingencies in different ways and provide differing strategic responses.*

Empirical research of the M&S typology also showed that *given environmental and industrial conditions prefer the prevalence of certain resources and the capabilities of specific SOs, while less favor the idiosyncratic behavioural characteristics of other SOs.* The prevalence of

Prospector SO is rather favored by uncertain environments, as these companies consider changes as opportunities for product and market innovation. The idealtypical behavioural aspects of *Defenders*, standing on the other end of the strategic adaptation continuum and focus on the process standardisation and efficient service of conventional product/market segments, can be dominant amongst more stable and predictable contingencial conditions.

Situated between Prospectors and Defenders – and by having a dual product/market approach – *Analysers* can emerge both in stable and dynamic environments, but their efforts, in accordance with their specific resources and capabilities, are aimed at the thorough examination of environmental conditions and the anticipation of their evolution which may result in a more predictable perception of the external environment. Inconsistent *Reactors* can be observed in both stable and changing environments, but they certainly perceive contingencial attributes of sectors going through dynamic structural and regulatory changes as very unpredictable, and struggle with the development of adequate adaptation patterns.

Interviews performed with pharmacy managers confirmed that *changes in market, professional and legal conditions and in the behaviour of sectoral stakeholders were significant, rapid and considered wildly unpredictable between 2006 and 2011.* On the one hand, a significant part of *pharmacies used to their previous stable, local positions of monopoly is struggling to develop adequate SO* for adapting themselves to the intensified degree of competition in the sector. On the other hand, the turbulent environmental changes favor the resources and capabilities of *pharmacies interpreting legal changes as business opportunities.* Thus, recommendations of literature, results of past studies and our „a priori" obtained experiences in the HPRDS adequately grounded the fourth research question (Q4) of our dissertation, according to which:

Q4: To what extent the **distribution ratios of pharmacies** – pursuing different industry-specific SOs of M&S – **differs from each other**?

Q4a: Is the **distribution ratio** of pharmacies following **Defender** SO **exceeded by** pharmacies pursuing **Prospector** SO? (P>A>D)

Q4b: Is the **distribution ratio** of pharmacies following **Analyser** SO **exceeded by** pharmacies pursuing **Prospector** SO? (P>A>D)

Q4c: Is the **distribution ratio** of pharmacies following **Defender** SO **exceeded by** pharmacies pursuing **Analyser** SO? (P>A>D)

Q4d: Is the **distribution ratio** of pharmacies following **Prospector, Analyser, Defender** SOs **exceeded by** pharmacies pursuing **Reactor** SO? (R>P>A>D)

As per our assumptions *pharmacy managers* – due to the various internal and external factors – *perceive the otherwise turbulent environmental changes as predictable or uncertain to a different extent.* The varying and subjective perception of changes in environmental conditions and behaviour of sectoral stakeholders *drives pharmacists towards developing different behavioural patterns.* However, *the degree of PEU is also influenced by the SO chosen by the pharmacy manager* to achieve the goals of its business. Thus *the degree of PEU* – besides the environmental conditions – *also derives from the resources and capabilities of pharmacies pursuing various SOs*, and originates from the idiosyncratic characteristics of Prospectors, Analysers, Defenders and Reactors. *Our research questions intending to explore*

the relationship between PEU and M&S's SOs were built up step by step. First, *we approached the interaction between strategy and environment from Child's (1972) managerial choice theory*, i.e. from the SOs consciously selected by pharmacists.

Q5: Does **the degree of PEU** by pharmacy managers – **following different SOs of M&S** – **differ from each other**?

Q5a: Is **the degree of PEU** by pharmacists following **Analyser** SO **exceeded by** the degree of PEU by pharmacists pursuing **Prospector** SO? (P>A>D)

Q5b: Is **the degree of PEU** by pharmacists following **Defender** SO **exceeded by** the degree of PEU by pharmacists pursuing **Analyser** SO? (P>A>D)

Q5c: Is **the degree of PEU** by pharmacists following **Defender** SO **exceeded by** the degree of PEU by pharmacists pursuing **Prospector** SO? (P>A>D)

Q5d: Is **the degree of PEU** by pharmacists following **Prospector, Analyser**, **Defender** SOs **exceeded by** the degree of PEU by pharmacists pursuing **Reactor** SO? (R>P>A>D)

Our sixth research question (Q6) according to the propositions of contingency theory is interpreting the relationship between PEU and the prevalence of Prospector, Analyser, Defender and Reactor pharmacies from the perspective of the determining effect of environmental conditions (Hofer, 1975). Based on contingency theory's implications*, we examined whether pharmacies perceiving various degrees of unpredictability in environmental conditions and sectoral stakeholders' behaviour exhibit different SOs or not*.

Q6: Does the **prevalence** (i.e. distribution ratio and strategic-level management characteristics) **of different SOs of M&S differ** according to groups of pharmacies characterised by either **high or low degrees of PEU**?

Q6a: In the group of pharmacies characterised by **high degrees of PEU** is the prevalence of **Prospector** SO **greater** than in the group featured by **low degrees of PEU**?

Q6b: In the group of pharmacies characterised by **high degrees of PEU** is the prevalence of **Defender** SO **lesser** than in the group featured by **low degrees of PEU**?

Q6c: In the group of pharmacies characterised by **high degrees of PEU** is the prevalence of **Analyser** SO **lesser** than in the group featured by **low degrees of PEU**?

Q6d: In the group of pharmacies characterised by **high degrees of PEU** is the prevalence of **Reactor** SO **greater** than in the group featured by **low degrees of PEU**?

Based on the research findings of strategic management literature, in regards to the degree of perceived (un)predictability in the behaviour of stakeholders of external environment and the development of contingencial conditions, *the direction and strength of the casual relationship between PEU and SOs of companies are not unambiguous.* On the one hand, the external environmental conditions may determine *which SOs would be followed by the managers, while on the other, the perception of external conditions by managers could be influenced by the SO chosen based on the availability of resources and capabilities of their businesses.* Before the liberalisation, in the period featured by *a more limited intensity of competition,*

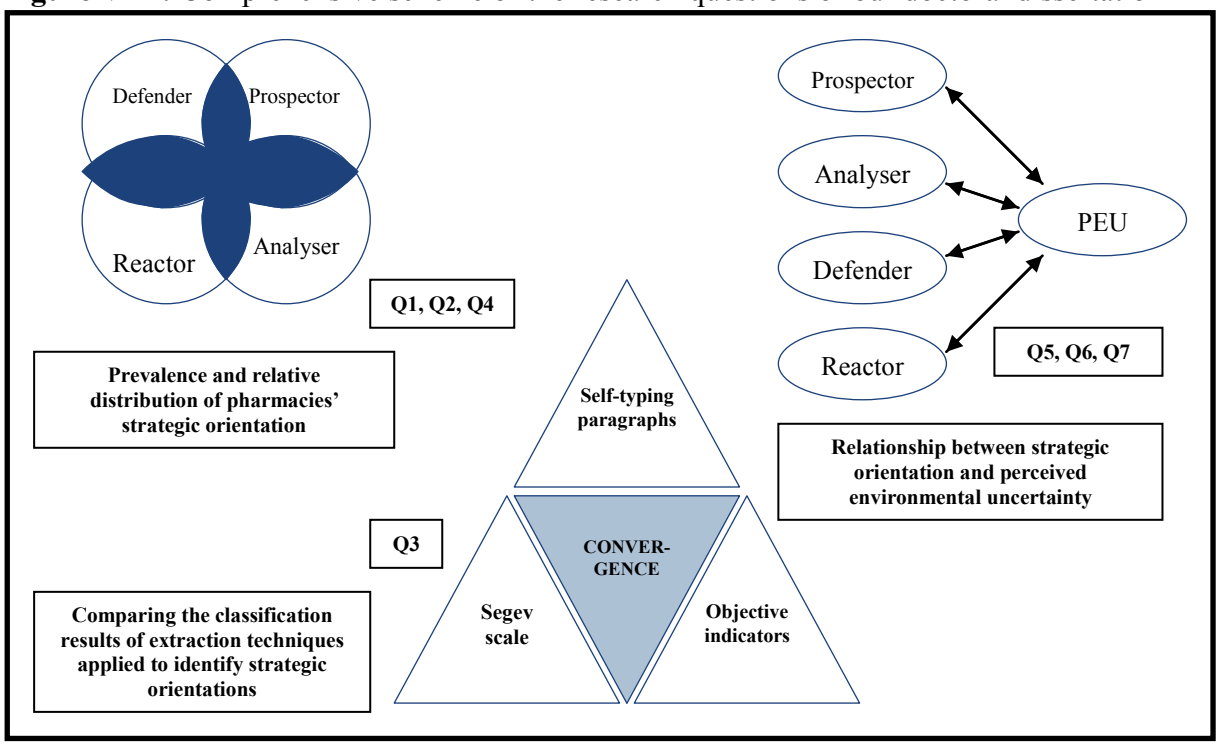
pharmacies were less encouraged to consciously follow consistent SOs, yet the „quasi-monopoly" circumstances and the favorable public funding conditions provided them stable profitability and efficiency. The deliberalisation processes and fiscal austerity measures, launched after 2011, again highly limited the strategic options available for pharmacies.

Based on the aforementioned, *we forecasted that large-scale and turbulent environmental changes determine the strategic decisions of pharmacy managers in a more substantial way than the degree of influence the consciously chosen SO exerts on the perception of changed environmental conditions.* Thus, our seventh research question (Q7) is aimed at the supposed dominance of the contingency theory over the managerial choice approach of Child:

Q7: Is the **degree of influence of SOs** followed by pharmacies **on PEU exceeded by** the **effect of PEU** by pharmacists **exerted on the SOs**?

After the establishment and explicit formulation of the general research questions of our dissertation, for the sake of transparent illustration, we summarised them in the following schematic figure:

Figure VIII: Comprehensive scheme of the research questions of our doctoral dissertation



Source: Figure made by the author

23. The hypotheses of our doctoral research

23.1. The relationship between Miles and Snow strategic orientations and business performance

The development of BP of companies pursuing certain SOs is considered as an area in strategic management discipline that provokes intensive research interest. In their earlier studies M&S clearly stated *their assumptions regarding the BP of Prospector, Analyser, Defender and Reactor businesses which were many times confirmed or refuted* in the

academic works of the next 30 years (Table IX). Therefore in our thesis investigating the relevance of M&S's strategic typology in Hungary, *we also tested their original propositions*.

Due to the turbulent changes in HPRDS (e.g. increased competitive intensity, decreasing public funding, the spread of horizontal and vertical integration forms etc.) resulted in the fact that considerable part of pharmacies are operating at a loss and variances in their BP increased remarkably. The in-depth interviews conducted with key stakeholders of the sector revealed that certain groups of the pharmacists' population „socialised" within limited competitive conditions of the past decades *have less managerial skills and less developed management competencies* which is making difficult to adapt their business to the changing environment. At the same time, pharmacies *make a serious effort to continuously improve their business practices and management processes*. Therefore in our research we assumed *a wide variation regarding the market effectiveness (sales) and financial profitability (net profit) BP indicators* realised by domestic pharmacies.

Based on the degree of fit or misalignment of SO and PEU, *we assumed differences between BPs exhibited by Prospector, Analyser and Defender pharmacies*. *Prospectors*, considered as pioneers in intensive search for product/market innovations, interpret turbulent changes experienced in HPRDS as a business opportunity. They offer specific and deliberate strategic responses to unpredictable environmental conditions aiming at the expansion of their product and service portfolio and locating new patient segments, which in turn *can result in higher levels of SAL. Defenders*, more interested in improving their conventional product offerings and in the standardisation of management processes are more likely to respond to turbulent environmental changes by taking measures directed to enhance the degree of loyalty of their patient segments. Due to their nature to minimise business risks, they tend to economise financial resources and are less open to improvementd of the conventional product offerings and the standardisation of management processes, so they *realise lower levels of SAL compared to Prospectors.*

The response of Analysers to the unpredictable environmental conditions – combining the behavioural aspects of Prospectors and Defenders – aims at the cautious expansion of product and service portfolio, yet simultaneously keeping their patient segments with conventional products. *Due to the introduction of promising products and services and the prudent use of resources to find new perspective patient segments, Analysers' SAL are expected to be higher than that of Defenders, but lower than that of Prospectors*. Hence, our first hypothesis (H1) is formulated to test the relationship between the SOs of M&S and pharmacies' SAL:

H1: The **strength of the relationship** between **Prospector, Analyser, Defender SOs** and the **sales** of pharmacies **differs** from each other. (P>A>D)

H1a: The strength of the **positive** relationship between **Prospector** SO and **sales** of pharmacies **exceeds** the degree of the **positive** relationship between **Analyser** SO and sales of pharmacies. (P>A>D)

H1b: The strength of the **positive** relationship between **Prospector** SO and **sales** of pharmacies **exceeds** the degree of the **positive** relationship between **Defender** SO and sales of pharmacies. (P>A>D)

H1c: The strength of the **positive** relationship between **Analyser** SO and **sales** of pharmacies **exceeds** the degree of the **positive** relationship between **Defender** SO and sales of pharmacies. (P>A>D)

The empirical observations of Hambrick (1983a) and the majority of research studying BP implications *proved that the individual M&S's SOs have a different BP focus and also show different results based on these various performance dimensions.* The *methodological distinction* between market effectiveness (sales) and financial profitability (net profit) *was assumed to be well-grounded and justified in our thesis too.*

The degree of PEU regarding the behaviour of HPRDS's stakeholders and the changes in the regulatory conditions, *encourages Defenders to the deeper exploitation of their actual product/service segments' potential*, as well as the rational use of financial resources and the improvement of efficiency by the standardisation of management processes. As a result, *a significant increase of NP for Defender pharmacies can be predicted.* In contrast to Defenders, pharmacies following *Prospector* SO react to the turbulent environmental changes with the expansion of product and service portfolio, reaching and addressing new patient segments and introducing innovative business practices. However, these necessitate significant financial investment, *so the profitability of Prospectors is expected to fall behind compared to the Defenders.*

Analyser pharmacies operating by dual product/market approach *are expected to split their financial resources,* channeling one part of it to introduce new value propositions and while the rest to retain existing patient segments and standardise management processes. As a consequence, *their NP is expected to lag behind that of Defenders, but exceeds the profitability of Prospectors.* Thus, our second hypothesis (H1) concerning the effect of SOs on NP of pharmacies is the following:

H2: The **strength of the relationship** between **Prospector, Analyser, Defender SOs** and the **net profit** of pharmacies **differs from each other**. (D>A>P)

H2a: The strength of the **positive** relationship between **Defender** SO and the **net profit** of pharmacies **exceeds** the degree of the **positive** relationship between **Analyser** SO and the net profit of pharmacies. (D>A>P)

H2b: The strength of the **positive** relationship between **Defender** SO and the **net profit** of pharmacies **exceeds** the degree of the **positive** relationship between **Prospector** SO and the net profit of pharmacies. (D>A>P)

H2c: The strength of the **positive** relationship between **Analyser** SO and the **net profit** of pharmacies **exceeds** the degree of the **positive** relationship between **Prospector** SO and the net profit of pharmacies. (D>A>P)

The majority of the M&S typology research studying its BP implications *proved that the BP of the organisations exhibiting consistent SO exceeds that of Reactors.* However, in the studies demonstrating the possibility of realisation of optimal BP for Reactors, authors examined precisely *those sectors which were characterised by limited competitive intensity due to certain state authorities and regulations.*

However, despite the prevalence of bureaucratic coordination mechanisms – based on the

interviews with the pharmacy managers – *we still hypothesised suboptimal BP for pharmacies pursuing inconsistent SOs.* We assume Reactors are unable to respond by deliberate and decisive strategic answers to the erratic behaviour of HPRDS's stakeholders and to the instability of environmental conditions. They are „drifting" and „muddling" with the regulatory changes, in most cases just waiting for the slowdown of the environmental turbulence and the assistance of sectoral policy decision makers. *Even if environmental pressures force them to act, due to the lack of adequate resources and capabilities they are not able to develop a successful behavoral pattern of environmental adaptation and strategic-level management.* They make unfounded decisions regarding product and service portfolio expansion, are not able to address new patient segments and fail to conserve their conventional markets and to streamline their management processes. *Thus, in our hypotheses we forecast that Reactors realise suboptimal BP, so their SAL and NP are also fall behind compared to Prospectors, Analysers and Defenders:*

H1d: Following **Reactor** SO exerts a **negative influence** on the **sales** of pharmacies.

H2d: Following **Reactor** SO has a **negative effect** on the **net profit** of pharmacies.

23.2. The potential moderating effect of perceived environmental uncertainty on the relationship between strategic orientation and business performance

In Chapter 12.2. we concluded that strategic management discipline maintains the opinion that various SOs can also emerge in environmental conditions which are not idealtypical for them. It also claims that *if there is a discrepancy in the fit between the perception of environmental conditions by managers and the pursued SO, then its negative effects can be detected in the BP of the firm.* Thus we did not predict either that in groups of pharmacies characterised by low or high PEU only those pharmacies can be found which pursue a theoretically adequate SO, *but we certainly assumed that the degree of PEU can influence the development of the relationship between SO followed by pharmacies and their BP.*

Resources and competencies of pharmacies pursuing Prospector SO are suitable to seize business opportunities arising in the changes of market, pharmaceutical and regulatory environments. Based on our reasoning, it is logical that in parallel to the increase of the degree of PEU Prospectors – interested in the innovative expansion of their product and service portfolio – *are continuously able to reach new patient segments which results in the increase of their SAL.* Similarly, *in case of the decrease of PEU, Prospectors are discouraged to expand their exact product and service portfolio* which would be the most compatible with their resources and competencies, *thus resulting in a decrease of their turnover*.

In an analogical manner, the *increase of PEU* makes it less possible for pharmacies pursuing *Defender* SO to conduct a business behaviour compatible with their skill set. The turbulent environmental changes divert resources from serving efficiently the conventional product/market domains, *leading to the decrease in Defenders' NP.* However, *the decrease of the perceived unpredictability by pharmacy managers allows Defenders* to optimise management processes and to exploit existing patient segments by conventional products, which *can cause an increase in their profitability*.

The *BP of Analysers*, running by dual product/market approach, is characterised by a healthy balance which is manifested by an average optimal level in regards of both efficiency and effectiveness. *Turbulent changes* in the market, professional and legal environments of the

HPRDS *shift Analyser pharmacies to partially give up the balance between the conventional and innovative product/service segments.* Based on our experience obtained via the in-depth interviews, the increase of competitive intensity *forces decisive steps on the part of pharmacies to expand their product and service portfolio, overshadowing the efficient serving of existing patient segments with conventional products.* Based on the abovementioned, in our third hypothesis (H3) we assumed that *with the increase of PEU the relationship between viable SOs and SAL is getting stronger, while compared to NP it is weakening*:

H3: **PEU moderates** the relationships between **M&S's SOs and sales** of pharmacies.

H3a: In parallel to the **increased degree of PEU** the **positive** relationship between **Prospector** SO and **sales** of pharmacies **strengthens.**

H3b: In parallel to the **increased degree of PEU** the **positive** relationship between **Analyser** SO and **sales** of pharmacies **strengthens.**

H3c: In parallel to the **increased degree of PEU** the **positive** relationship between **Defender** SO and **sales** of pharmacies **strengthens.**

H4: **PEU moderates** the relationships between **M&S's SOs and net profit** of pharmacies.

H4a: In parallel to the **increased degree of PEU** the positive relationship between **Prospector** SO and **net profit** of pharmacies **weakens.**

H4b: In parallel to the **increased degree of PEU** the positive relationship between **Defender** SO and **net profit** of pharmacies **weakens.**

H4c: In parallel to the **increased degree of PEU** the positive relationship between **Defender** SO and **net profit** of pharmacies **weakens.**

Reactors are reluctant to make bold decisions and to take decisive managerial actions in response to changed environmental conditions. These pharmacies supposedly refrain from the introduction of new products and services, as well as are less willing to reach new patient segments and adopting innovative business practices. However, if they perceive the degree of environmental turbulence too high, they tend to make their business decisions from mere necessity and it is likely that this pressure leads to an even more inconsistent managerial decision-making. *The ill-conceived policies of resource allocation and development of competences result in portfolio expansions not suitable for local patient needs and further deterioration of* BP. Therefore, *with the increase of PEU*, we assumed *the decrease of both SAL and NP* in the case of pharmacies pursuing *Reactor SO*:

H3d: In parallel to the **increased degree of PEU** the **negative** relationship between **Reactor** SO and **sales** of pharmacies **strengthens.**

H4d: In parallel to the **increased degree of PEU** the **negative** relationship between Reactor SO and **net profit** of pharmacies **strengthens.**

23.3. The potential moderating effect of geographical location of pharmacies on the relationship between strategic orientation and business performance

Based on the knowledge of environmental and management characteristics of HPRDS, *as a function of pharmacies' GL, we assume M&S's SOs can prevail in different ways regarding their BP.* Professional interviews made with sectoral stakeholders showed that pharmacies pursuing Prospector, Analyser, Defender and Reactor SOs in urban environments can not be treated the same way as their counterparts operating within rural conditions. Due to differences experienced in the degree of competitive intensity, magnitude of purchasing power, accessibility and patients' needs and preferences, *the management characteristics of SOs can show up differently depending on the GL of the pharmacy.* According to the opinion of sectoral decision-makers, *different business policy „margins" available for pharmacies in cities and in the countryside can lead to divergence* not only in behavioural patterns of Prospector, Analyser, Defender and Reactor SOs, *but in their BP too.*

Therefore – as we have already discussed it earlier in our dissertation – we integrated GL variable into our research as a moderating factor, and in our hypotheses regarding the potential moderating effect of the pharmacies' GL *we assumed that the relationship between Prospector, Analyser, Defender and Reactor SOs, the degree of PEU by pharmacists and BP shapes a different picture in the case of pharmacies operating in cities and in the countryside.* For pharmacies pursuing *Prospector* SO the *conditions* of the *urban environment* are certainly more *favorable* as they facilitate the expansion of product and service portfolio, the reach of new patient segments, and *thus the increase of turnover*. However, *in the countryside, Prospectors have less options to portfolio expansions to increase sales*, due to the adverse demand conditions. This also certainly prevents them from directing irrational amount of their resources to diversification, which in turn, *reduces the profitability losses of Prospector pharmacies operating in rural context.*

For pharmacies pursuing *Defender SO*, *rural environments offer more favorable conditions for the deeper exploitation of the benefits* deriving from their conventional products/markets. This is due to the fact that the composition of the patient population and the change in their needs and preferences is not considered to be significant which allows them – by adequately applying their resources and capabilities – to concentrate on the standardisation of management processes, thus *increasing their efficiency.* We also assumed that *to increase SAL as a secondary item in their BP focus, Defenders also have more chance in the cities* characterised by more favorable demand conditions.

According to our assumptions in case of *Analyser* pharmacies characterised by dual product/market core, *for effectiveness it is the conditions of urban environment, for profitability it is those of rural one that are more favorable.* In cities, higher purchasing power, heterogeneity of patient needs and preferences as well as the more likely adoption of innovations encourage the product portfolio expansion measures and boost the SAL. As far as the countryside is concerned, here Analysers also have the opportunity to serve existing patient segments with conventional products and to optimise predictable management processes, i.e. to increase their NP.

According to interviews with pharmacy managers, *Reactor* pharmacies – pursuing an inconsistent SO due to deficiencies in their resource and capability set – *are not even able to take advantage of the otherwise favorable urban demand conditions.* Their underdeveloped management competencies are not suited to offer a product and service portfolio consciously

matching to the changing patient needs. Despite this fact and because of the higher degrees of competitive intensity, even Reactor pharmacies in the cities are forced to take – in most cases not well-thought – steps to expand their product and service portfolio, however, it requires considerable financial expenses. *Therefore, in the case of urban Reactor pharmacies we assume the further deterioration of both SAL and NP compared to their counterparts operated in a less competitive (e.g. rural) environment.* Based on the above, we formulated the following hypotheses for the potential moderating effect of GL of pharmacies played in the relationship between SO and BP:

H5: **GL** of pharmacies **moderates** the relationship between the **SOs** and **sales** of pharmacies

H5a: In **urban** context the **positive** relationship between **Prospector** SO and **sales** of pharmacies becomes **stronger** compared to that experienced in **rural** environments.

H5b: In **urban** context the **positive** relationship between **Defender** SO and **sales** of pharmacies becomes **stronger** compared to that experienced in **rural** environments.

H5c: In **urban** context the **positive** relationship between **Analyser** SO and **sales** of pharmacies becomes **stronger** compared to that experienced in **rural** environments.

H5d: In **urban** context the **negative** relationship between **Reactor** SO and **sales** of pharmacies becomes **stronger** compared to that experienced in **rural** environments.

H6: **GL** of pharmacies **moderates** the relationship between **SOs** and **net profit.**

H6a: In **urban** context the **positive** relationship between **Prospector** SO and the **net profit** of pharmacies is **weaker** than that experienced in **rural** environments.

H6b: In **rural** context the **positive** relationship between **Defender** SO and the **net profit** of pharmacies is **stronger** than that experienced in **urban** environments.

H6c: In **urban** context the **positive** relationship between **Analyser** SO and the **net profit** of pharmacies is **weaker** than that experienced in **rural** environments.

H6d: In **urban** context the **negative** relationship between **Reactor** SO and the **net profit** of pharmacies is **stronger** than that experienced in **rural** environments

23.4. The combined moderating effect of perceived environmental uncertainty and geographical location on the stochastic relationship between strategic orientation and business performance

Based on M&S's theoretical implications and experience gained from the interviews with representatives of HPRDS stakeholder groups *we assumed that the impact of PEU, playing a potentially moderating role in the relationship between SO pursued by the pharmacies and BP, can occur differently in urban and rural environments.* The turbulent environmental changes in the sector *encourage pharmacies pursuing various SOs to expand their product and service portfolio, address new patient segments and introduce innovative business applications.* However, in our opinion, the success rate of these business policy measures *depend not only on the idiosyncratic characteristics of the various SOs, but also on whether the pharmacy is operated in an urban or in a rural environment.*

In cities, characterised by more favorable conditions for pharmacy operation, portfolio expansion initiatives in response of the rise in the degree of competitive intensity are expected to generate more demand. This is likely to enhance SAL in a more considerable way, than it would be expected in the case of rural pharmacies. Despite the fact that different resource and competency base of M&S's SOs support to a various extent the success of portfolio expansion initiatives, we assume *the efforts aimed to reach new patient segments and introduce innovative business practices in case of all three viable SOs – Prospector, Analyser, Defender – contribute to the increase in SAL more in the cities and less in the countryside.*

However, the product and service portfolio expansion in response to the increasing degree of PEU requires significant financial and human resource investments from pharmacies. In urban pharmacies novelties are expected to generate more demand and the newly introduced value propositions can be sold at a higher margin. This is likely to mean that portfolio expansion measures taken in reaction to PEU tend to contribute less to the profitability of pharmacies in the countryside, than in the cities. Based on the less heterogeneous patient needs, the lower willingness to accept innovations and the lower purchasing power characterising the countryside, *we predicted that in case of consistent SOs these initiatives contribute less to the increase in NP of pharmacies than in the cities.*

In case of the most likely suboptimally performing Reactors we expect that favorable urban environments can partly compensate for the negative impact on the effectiveness and profitability by the inconsistent and hasty strategic-level measures taken in response of the increasing PEU in the product and service portfolio expansion, reaching for new patient segments and the implementation of innovative business applications. *We assume that increasing degree of PEU by pharmacy managers degrades the SAL and NP of Reactor pharmacies in a more considerable way in the countryside than in cities.* In consequence, we formulated the following hypotheses for the combined potential moderating effect of PEU and GL in the relationship between SO pursued by the pharmacies and BP:

H7: **PEU** in combination with **GL moderates** the relationships between **M&S's SOs** and **sales** of pharmacies.

H7a: In **urban** context the **increasing degree of PEU** makes the **positive** relationship between **Prospector** SO and **sales** of pharmacies **stronger** than that experienced in **rural** environment.

H7b: In **urban** context the **increasing degree of PEU** makes the **positive** relationship between **Analyser** SO and **sales** of pharmacies **stronger** than that experienced in **rural** environment.

H7c: In **urban** context the **increasing degree of PEU** makes the **positive** relationship between **Defender** SO and **sales** of pharmacies **stronger** than that experienced in **rural** environment.

H7d: In **rural** context the **increasing degree of PEU** makes the **negative** relationship between **Reactor** SO and **sales** of pharmacies **stronger** than that experienced in urban environment.

H8: **PEU** in combination with **GL moderates** the relationship between **M&S's SOs and net profit** of pharmacies.

H8a: In **rural** context the **increasing degree of PEU** makes the **positive** relationship between **Prospector** SO and **net profit** of pharmacies **weaker** than that experienced in **urban** environment.

H8b: In **rural** context the **increasing degree of PEU** makes the **positive** relationship between **Analyser** SO and **net profit** of pharmacies **weaker** than that experienced in **urban** environment.

H8c: In **rural** context the **increasing degree of PEU** makes the **positive** relationship between **Defender** SO and **net profit** of pharmacies **weaker** than that experienced in **urban** environment.

H8d: In **rural** context the **increasing degree of PEU** makes the **negative** relationship between **Reactor** SO and **net profit** of pharmacies **stronger** than that experienced in **urban** environment.

23.5. The robustness of the effect of strategic orientation on business performance

The main research focus of our dissertation from both theoretical and methodological perspectives is to explore the moderating effect of PEU by pharmacy managers and the GL of pharmacies in the relationship between SOs and BP. However, *we can not either forget about the fact that the variance in BP – beyond the effects of SO, PEU and GL – is influenced also by company-specific, sectoral and macro-level factors.* Based on the guidelines of strategic management and on the qualitative experience obtained from stakeholders of HPRDS stakeholders, we integrated into our conceptual research model *ownership structure of pharmacies, total area of space of pharmacy and the officina, number of employees, participation in horizontal and/or vertical cooperation forms and variables partaining to site characteristics of pharmacies.*

In our research we examined whether *we filter the effect of control variables most probably determining BP of pharmacies, are the connections formulated in our hypotheses H1-H8 still maintained regarding the complex relationships between SO, PEU, GL and BP.* Our attention was directed to observe whether the impact of the pursued SOs is still significant to the change in SAL and NP along with ownership structure, size, cooperation and site conditions of pharmacies influencing BP. If this is the case and these relations remain significant even by controlling for the effect of the abovementioned variables, then it proves our hypothesis that in HPRDS characterised by turbulent environmental changes and limited, but increased competitive intensity, *conscious choice of micro-level environmental adaptation behavioural patterns and consistent accomplishment of strategic-level tasks have a major role in influencing pharmacies' BP.* Based on this, we formulated the final hypothesis of our research:

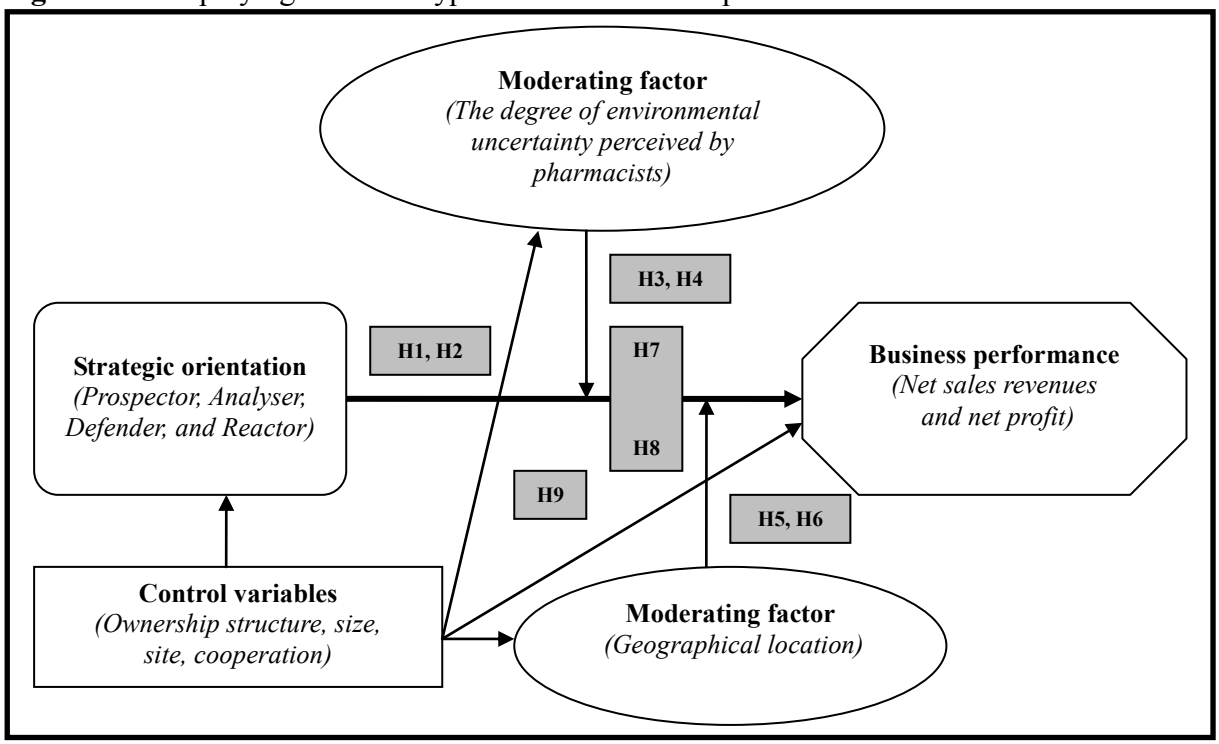
H9: The **interrelations** – established as a result of the potential moderating influence of PEU and GL on the relationship between the SO and BP – **are robust after controlling for** the **effect** of relevant **industry-specific variables.**

H9a: The **observed relationships** between the **SOs** of Miles and Snow and **sales** of pharmacies are **robust.**

H9b: The **observed relationships** between the **SOs** of Miles and Snow and **net profit** of pharmacies are **robust.**

The hypotheses tested and formulated in the previous chapters of our doctoral research are displayed in the conceptual model of Figure IX.

Figure IX: Displaying research hypotheses in the conceptual model of the Ph.D. thesis



Source: Figure made by the author

24. The quantitative phase of the doctoral research

After finalising the measurment instruments suitable to the operationalisation of M&S's SOs, PEU and BP, we turned our attention to the organisation of the quantitative research for the empirical examination of our conceptual model. *The backbone of the quantitative phase of our primary research was given by a large sample survey data collection* and after processing the results of which we sought to test our formulated hypotheses by mathematical-statistical methods and draw generalised conclusions.

24.1. Large sample survey data collection

For the completion of our PhD research, the most cardinal problem proved to be *the organisation and execution of the data collection for the large sample quantitative survey*. Several factors played role in the complexity of our task, but we need to mention the harsh conflict of interest between the stakeholders of domestic drug supply system, the mistrust and huge workload of pharmacists, the relatively high cost of the sampling and the expectedly low response rate. During the sampling procedure we had to plan carefully the following five steps (Malhotra-Simon, 2009):

24.2. The definition of population

In our thesis *the population naturally meant the public pharmacies in Hungary*, their number in the period of data collection (Fall 2012 – Summer 2013) exceeded 2400. The hospital, institutional, the so-called „doctors' pharmacies" and „affiliates" of public pharmacies were not part of the population of public pharmacies from any statistical or sectoral point of view, so these firms were not considered as subjects in the empirical research.

24.3. Organising the sampling frame

In scientific research it is a rare occasion that scholars would have a list at their disposal which contains all the elements of the population supporting greatly the sampling process. *It is important to note that from the 1st of January 2011, due to a change in the regulations, only those can be employed in the Hungarian health care sector who are members of a medical (e.g. physician, pharmacist, or professional) chamber organisation.* In practice this meant that the contact details of all Hungarian pharmacists – including naturally pharmacy managers with personal rights – were available at the HCP and its assigned county offices.

Due to the assistance of the Department of Marketing and Doctoral School of Business Administration of Corvinus University of Budapest we concluded a cooperation agreement with the president of the HCP who willingly offered his support to make us available the contact details of pharmacy managers for our research. The presidium of HCP assisted in the conduct of the survey regarding the strategic behaviour of pharmacies in Budapest and in 4 other counties characterised by having pharmacies with different socio-demographic criteria. *These four were Baranya, BAZ, Pest és Vas counties, thus pharmacies operating in these geographical units formed the sampling frame of our doctoral research. This meant a total of 983 pharmacies which made up about 40% of the total national population.*

24.4. Selection of the sampling technique

In our thesis, there is no point to talk about a probability or non-probability sampling technique. The reason for this is that in support of performing a survey based research on the strategic behaviour of pharmacies, the presidents of local chambers of Budapest and the counties Pest, Baranya, BAZ and Vas made us available the contact details of all the regional pharmacy managers. This way we had the opportunity in given regional units to distribute our survey in a *census-like* way to all members of *pharmacy manager list* (Hunyadi-Vita, 2003).

24.5. Conducting the data collection

Based on the recommendations embraced during the in-depth interviews with the representatives of HCP and pharmacists, *we decided to launch a mail delivery based survey process* (Dillman, 1978). This was motivated by the distrust of pharmacists against electronic data retrieval infused by the fear of the inability to assure a complete anonimity. One week before the delivery of the questionnaires, we sent an electronic cover letter signed by the president of the HCP and its regional leaders to every pharmacy manager in the capital and in the counties of Pest, Baranya, BAZ and Vas.

In this letter we drew their attention to the fact that our research is *non-profit, serves only for academic purposes* and expenses were funded by the Doctoral School of Business Administration of Corvinus University of Budapest. In addition, we assured pharmacists that *response is voluntary and completely anonymous, returned questionnaires will be treated as*

strictly confidential and individual answers are not to be shared to any third party even anonymously (Act CXII of 2011). Surveys were delivered afterwards, the research package included a cover letter stamped and signed by HCP leaders, the questionnaire on the strategic behaviour of pharmacies and a pre-paid, in advance addressed return envelope for responses.

One week after the dispatch of the questionnaires, with the cooperation of HCP regional officials, we sent out an *electronic reminder* to pharmacists, kindly asking them again to fill our questionnaires in (Groves et al., 2001). *A week after the first reminders we contacted all the pharmacy managers of each county by phone as well*. During the conversations, we had the opportunity to explain potential respondents the purpose and relevance of our doctoral research aiming the exploration of the strategic management of pharmacies from a sectoral-policy perspective. Our experience shed light on the fact, that *phone calls reduced considerably the mistrust of pharmacists and increased response rate* which resulted in a significant increase in the number of returned response letters (Tourangeau et al., 2000).

24.6. Response rate

For the determination of response rate, we needed to define the population of pharmacies in Budapest and counties of Pest, Baranya, BAZ and Vas. In the period of our survey data collection, based on the official national pharmacy register of HCP and National Public Health Service the number of operating public pharmacies was stated as follows: 424 in Budapest, 261 in Pest county, 153 in BAZ county, 99 in Baranya county and 46 in Vas county. This means that a total of 983 pharmacy managers could have received our questionnaires on the strategic behaviour of pharmacies. At the end of our data collection 236 response-envelopes returned to our university. *Not counting the incomplete or incorrectly filled out and thus excluded items from the quantitative analysis, we obtained 207 pieces of completed questionnaires* which could be incorporated into mathematical and statistical analyses (De Vaus, 2002). *Thus, response rate in our research amounted to 21% which is in line with the average experienced in similar international strategic studies* (Baruch-Holton, 2008).

As it can be seen in Table XXIX, *the willingness to response of the pharmacy managers in Pest county* was *outstanding* in both absolute and relative terms. Compared to the population of the pharmacies in Budapest, *metropolitan respondents are represented only by a small percentage* in the sample. The response rate experienced in *rural counties* roughly met our expectations, we can state that in the counties of Baranya, BAZ and Vas, *approximately 1/5 of the pharmacy managers completed and returned* our questionnaire evaluating the strategic behaviour of pharmacies. The potential sector-specific reasons of the differences in response rates are not detailed here due to the size limits of the dissertation.

24.7. Sample structure

In Table XXX, the number and distribution of responding pharmacies are listed by the relevant sector-specific, socio-demographic characteristics. By the results of Tables XXIX-XXX and the knowledge of the structure of domestic public pharmacies, *we can conclude that the criteria of representativity are more or less violated*. This was determined by the sampling frame because we only gained support for the data collection from the HCP regional presidents of Budapest and four more – Baranya, BAZ, Pest and Vas – counties. At the same time, socio-demographic and sector-specific characteristics of chosen counties pretty well approximate the structural attributes of the total pharmacy population. Therefore our sample composed of the 207 responding pharmacy managers is relatively heterogeneous, and

representative as for the settlement structure, BP and corporate/legal form, while not representative regarding ownership structure and the participation in horizontal and vertical forms of cooperation. Hence, pertaining to the generalisation of results, we formulate our research conclusions in a very cautious way by highlighting the proper interpretation barriers.

25. Introduction of the applied mathematical-statistical methods

In Chapters 22-23 of our dissertation we established our research questions and hypotheses from scientific-theoretical and sector-specific perspectives which were answered and tested by performing diverse multivariate methodologies of data analyses. In this chapter, we present the mathematical-statistical methods applied in our dissertation. Due to length limitations we were unable to describe all the applied methodological approaches, *so in the following sections we only detail the multivariate techniques used to examine the interrelations between the central constructs* – SO, PEU, GL and BP – of our PhD thesis.

The three most important goal of our empirical research are 1) *to identify strategic behaviour patterns observable in the HPRDS*, 2) *to examine the interrelations between SO and PEU*, 3) *and to explore the potential moderating effects of PEU of pharmacists and GL of pharmacies* in relationship of the M&S's SOs and BP.

To realise *the first objective*, we focused mainly on testing of the validity and reliability of multi-item scale of Segev (1987) used to identify the SOs of M&S. The reason for this is that to answer our Q1 and Q2 research questions addressing the identification of M&S's SOs and determination of their number in the HPRDS as well as exploration of their potentially markedly distinguishable behavioural characteristics, discriminant validity analysis of the Segev scale has been given a major importance, according to which the conduct of exploratory (EFA) and confirmatory (CFA) factor analyses (Barna-Székelyi, 2009, Hair et al., 2010) played a great role in our examinations.

CFA is a suitable method for examining the fit of a theoretically established – composed of latent and manifest variables – structure to the data obtained in the empirical research (Jöreskog, 1969, Kline, 2010), its role is thus crucial in the identification and definition of the number of SOs observed in the HPRDS (Q1). In addition, the analysis of covariance between the M&S's SOs operationalised as latent constructs in the CFA can be used to decide to what extent are the SOs revealed in the sector markedly different (Q2) (Thompson, 2004).

Reflecting on the weaknesses of previous studies examining M&S strategic typology, *we put a great emphasis in our thesis on the examination of convergent validity in its classical sense.* In our research, we intended to identify the SOs observed in the HPRDS by applying three measurement instruments. To answer our third research question (Q3), we took the results regarding the sample distribution of Prospector, Analyser, Defender and Reactor pharmacies determined by the method of self-typing paragraphs, the multi-item Segev scale and the objective indicators, and – coded as Dummy variables – we compared them by running cross tabs analyses and McNemar tests (McNemar, 1947, Maxwell, 1970, Yang et al., 2010).

By testing the differences between the distribution results of a specific strategy identification technique, *we examined the percentage distribution of Prospector, Analyser, Defender and Reactor pharmacies to check whether we find significant differences* (Q4). To answer the fourth research question (Q4), we took the results pertaining to the SOs' relative frequencies – obtained by the classification procedure of each strategy extraction method (i.e. self-typing

paragraphs, the Segev scale and the objective indicators) – and compared them by Dummy variables and paired sample t-tests (David-Gunnink, 1997, Zimmerman, 1997).

The second objective of the PhD thesis was to examine the prevalence of the contingency theory and the " managerial choice" approach in the HPRDS (Q5, Q6 and Q7). The degree of PEU (Q5) by pharmacy managers pursuing different M&S's SOs and the distribution of Prospector, Analyser, Defender and Reactor pharmacies in the groups characterised by low and high PEU (Q6) were determined by cross tabs, ANOVA and SEM analyses. The exploration of the interactions between SO and PEU (Q7) was also done by structural equation modeling (SEM) based on the examination of the explicit degree of influence of the two latent constructs on each other (Hair et al., 2010).

To test hypotheses H1-H9 formulated to achieve *the third objective* of our thesis, we performed preliminary regression analyses. We also wanted to explore the potential moderating effect of PEU by pharmacy managers and the GL of pharmacies – playing potentially a „refining" role in the relationship between SO and BP – by hierarchical interaction and multigroup regression analyses (Garson, 2006, Ho, 2006). By the integration of relevant socio-demographic characteristics and site attributes of pharmacies into these regression analyses we examined whether the influence of SO on BP remains robust, even in case we filter the effect of abovementioned control variables (Cohen et al, 2013).

The main methodological element of our dissertation, the application of SEM, played an important role in the confirmation of results obtained via performing hierarchical interaction and multigroup regression analyses. The measurement instruments already tested in previous studies and exhibiting confirmatory factor structure – i.e. multi-item scales operationalising M&S's SOs (Segev, 1987) and PEU (Miles-Snow, 1978) – can be perfectly integrated into various structural models which then could be used to test our hypotheses H1-H9 revealing the potential moderating effects of PEU and GL on the relationship between SO and BP.

25.1. A short introduction of structural equation modeling (SEM)

The SEM is a frequently used multivariate mathematical-statistical methodological toolbar, widely spread in prestigious international studies and publications. One of the great advantages of SEM that *it is able to validate the multi-item scales previously applied in empirical studies in different context* (Klarmann, 2011). Another outstanding feature of SEM that *it is suitable for testing complex relationships between latent constructs and indicator variables and also the latent constructs* (Kaplan, 2010).

In our dissertation the operationalisation of SO and PEU as latent constructs was justified by the following methodological aspect. Based on the experience of the in-depth interviews, the majority of *pharmacists* having limited business knowledge and less developed management competencies *had difficulties in answering the explicit questions about their SO and PEU*. Thus it was more effective to ask them about the manifestations of the characteristics of Prospector, Analyser, Defender and Reactor SOs and PEU with which the respondents could be encountered during the daily operation of the pharmacies.

In most cases, researchers have the opportunity both in a so-called reflective and informative way for the operationalisation of theoretical constructs integrated into structural models (Diamantopoulos-Siguaw, 2006). In case of *reflective measurement models*, we make the assumption that causal processes move from the latent constructs in the direction of the

indicators, so changes in a latent variable will modify the manifestation of indicator variables too (Coltman et al., 2008). *The name of the reflective measurement models comes from the fact that indicators (manifest or measured variables) are actually the reflection or manifestation of an unobservable latent variable* (Bollen, Lennox, 1991).

Therefore, *in the graphic illustration of reflective models, arrows depicting the direction and strength of the stochastic relationships are moving from the latent construct in the direction of the indicator variables*. Consumer behaviour literature abounds with reflective constructs, such as attitude, willingness to buy, consumer ethnocentrism etc, which are not observable phenomena and determine the measurable aspects of consumer behaviour.

Unlike reflective models, in the case of *formative constructs* the indicators define the latent variable (Henseler-Ringle, 2010). Researchers assume that *the changes occurring in the measurable indicators induce modifications in the latent construct* (Temme-Hildebrandt, 2006). In the graphical representation of the formative measurement models*, the arrows point from the indicator variables to the latent construct*. The meaning and development of the causal latent variable is determined by the common variance of the indicators.

Another major difference *between reflective and formative measurement models that while we assume a correlation between the indicator variables in the former case, we do not for the latter* (Diamantopoulos et al., 2008). This means that in the case of formative models, the removal of any indicator variable could result in the modification of the core content of the whole construct (Collier-Bienstock, 2009). For a formative construct a great example would be the quality of life which can be determined by such measurable indicator variables like health, financial and marital status of consumers (Bollen-Ting, 2000).

In our research, the relationship between *SOs (latent constructs)* and their scale items (indicator variables) pertaining to the strategic-level management aspects in the environmental behaviour of pharmacies has *a reflective nature* (Jarvis et al., 2003). This means that the reason of the manifestation of explicitly measurable behavioural characteristics is the common latent construct, the behavioural pattern observable in the environmental adaptation of firms, i.e. the SO (Mintzberg-McHugh, 1985, Diamantopoulos-Winkelhofer, 2001). Similarly, we can state that the relationship between *PEU* and associated manifest variables is also *reflective by nature*, because the opinion formed about the HPRDS conditions and the behaviour of key stakeholders is *largely determined by pharmacy managers' general subjective perception* of the sectoral-operational environment (Bagozzi-Yi, 2012). Accordingly, in Figures XXI-XXIV depicting our measurement models and SEM analyses the arrows point from the latent constructs toward the measurable indicator variables.

25.2.Widely used methods of structural equation modeling

The statisctical literature distinguishes *covariance- and variance based structural equation modeling methods*, accordingly the software packages used in quantitative and social science studies are trying to examine the structure of empirical data fit to the theoretical models based on the same. Among softwares based on covariance, we have to mention *Lisrel* (Linear Structural Relations, Jöreskog-Sörbom, 1979) and *AMOS* (Analysis of Moment Structures), while among the variance based techniques *PLS* (Partial Least Squares) can be regarded as most dominant (Chin-Newsted, 1999, Vinzi et al., 2010).

AMOS and Lisrel are considered as universal methodologies, as they are suitable to test the

validity and reliability of full models, while PLS examines mostly the relationship between latent constructs and is less used for full model fit testing and examining the complex causal interrelations between the elements of the total variable set (Hair et al., 2012). *The penetration of PLS methodology is mainly due to the fact that it is able to give a reliable estimation in case of samples with even a very small number of elements (50) and it is less sensitive to the infringement of the multivariate normality criterion of the distibution of variables integrated into the analyses* (Henseler, 2009). Methodological literature is considering LISREL as the most professional SEM methodology, because based on experience, it very accurately estimates parameters, able to integrate variables measured on almost all type of scales and it can be used to compare longitudinal data structures as well (Reinartz et al., 2009, Narayanan, 2012).

In our thesis, we used IBM SPSS AMOS 20 structural equation modeling software, because 1) we tested validity and reliability of scales exhibiting confirmatory factor structure and already applied in international studies, 2) we examined the complex interrelations between SOs pursued by pharmacies, PEU of pharmacy managers, GL of pharmacies and the development of BP, 3) during the data collection 207 pharmacists completed our questionnaire and this relatively high number of elements did not justify to limit ourselves to the application of PLS methodology. *This conclusion has been confirmed by the use of criteria determined by methodological literature concerning the application of SEM.*

25.3. Application criteria of structural equation modeling

Literature suggests that the number of *empirical observations* is one of the most important conditions of the application of SEM. According to many, for reliable and valid SEM based estimations the necessary sample size can be described by the $n/q>5$ formula (Bentler-Chou, 1987). The n in the formula is the sample size, while q is the estimated number of parameters in the model. This latter includes all the parameters, so latent constructs, indicator variables and error terms as well. By this rule, the number of elements in the sample should be at least five times more as the number of parameters. According to a less rigorous approach, structural analysis can be done with models fulfilling the $n-q>50$ criteria (Bagozzi, 1981). However, professionals, taking into consideration realistically the significant resource and time constraints of research, consider in most cases the sample of *minimum 200 respondents as the milestone for the acceptable application of structural equations* (Hair et al., 2010). Table XXXI examines the compliance with the abovementioned criteria of sample size regarding the application of SEM in the context of our research.

The results showed that neither of the multi-item scales used in our doctoral research met the the most rigorous requirements of Bentler-Chou. *However, the sample containing the 207 completed questionnaires fulfils* the Bagozzi (1981) and Hair et al. (2012) criteria, so both the PEU and the Segev scales are suitable to be integrated into SEM analyses.

Covariance based SEM procedures are based on the Maximum Likelihood estimation method, and the criterion of its application is *the multivariate normal distribution of the evaluations of variables* integrated into the study (Byrne, 2001). Based on the way of operationalisation of the variables (5-point Likert scale) and the potentially diverse perception of radical environmental changes occured during the last years in the HPRDS we could expect that our empirical data would not follow a normal distribution (Kline, 2010).

First we tested the *univariate normal distribution* of the items belonging to the M&S's SOs

and PEU. As expected, *the Kolmogorov-Smirnov and Shapiro-Wilks tests indicated significant deviation from normal distribution* (Mitev-Sajtos, 2007). Kurtosis and skewness values of the evaluations of examined variables approached the (-1, +1) range, but *it is not sufficient for the normal distribution.*

To test *multivariate normality* the so-called *Mardia's test* is the most frequently used in AMOS, which provides a coefficient and an associated critical value (C.R.) to determine multivariate kurtosis (Mardia, 1970). Multivariate normality of data is met if at 95% reliability level the C.R. value is less than 1,96 and the kurtosis coefficient of the Mardia's test is exceeds the *p*(p+2)* threshold value, where *p* is equal to the number of manifest variables integrated into the structural model (Schumacker-Lomax, 2010).

In the context of our doctoral research, *the Mardia's test was first used for the Segev scale identifying SOs, then for the confirmatory factor model (CFA) of the multi-item PEU scale of M&S*. The number of manifest variables of the Segev scale was 29, while this number was 45 for the PEU scale. As expected, the Mardia's kurtosis coefficients did not exceed the 29*(29+2)=899 and 45*(45+2)=2115 values in any of the cases. The kurtosis coefficient of the Segev scale was 103,058 with 17,484 C.R. value which is below 1,96. In the case of the PEU scale the coefficient was 197,821, while the C.R. value ended around 21,8.

Out of curiosity, we performed Mardia's multivariate normality test in case of the SEM quantifying the effect of M&S's SOs on BP of pharmacies, but results did not improve even with the integration of SAL and NP as dependent variables into our models. In the former case, the kurtosis coefficient was 133.898 with 21.983 C.R. value, in the latter 17.163 and 104.541. We could have used Mardia's test in the case of the – more sophisticated and using more manifest variables – models presented in the subsequent chapters of our dissertation, but their expected results would have been certainly even further from the p*(p+2) and 1,96 thershold criteria. *Therefore, in the data analysis context of our thesis the criterion of multivariate normality was not met.*

However, the Maximum Likelihood estimation method commonly used in AMOS fairly robust to the violations of multivariate normality (Kline, 2010). The sample size of 207, the elimination of extreme outliers and the „bootstrapping" process can remedy the problems of multivariate normality violation (Rencher, 1995). Based on the Mahalanobis distance, the exclusion of outliers in case of Likert scales can cause serious loss of information, so we did it only for BP indicators, but even this was not enough to meet the criteria of Mardia's test. At the same time, the use of „bootstrapping" and the sample consisting of 207 questionnaires completed by pharmacists is encouraging to conduct valid and reliable SEM analyses.

Another important condition for the application of SEM is *the minimal multicollinearity* which is the interfering – amplifying or debilitating effect exerted on dependent variables – influence between the independent (explanatory) variables. There are three basic approaches for the examination of multicollinearity (Klarmann, 2009).

1. The application of *the rule of thumb by „visual inspection" of the results*. For example, standardised regression weights with frequently changing signs and magnitude, standardised regression weights greater than 1, extremely high proportions of variance explained (R^2), correlation values over 0,9 between the manifest variables, all increase the probability of the presence of multicollinearity's distorting effects.

2. *Tests regarding the decomposition of variance*. For example, the examination of tolerance value (1-R^2 should not be less than 0.1) or the calculation of the widely known and frequently used VIF indicator (not greater than 5).

3. *Methods based on factor analysis* amongst which we need to highlight the approval of discriminant validity by the so-called Fornell-Larcker citeria.

As we highlight it repeatedly in the later sections of our dissertation examining discriminant validity, the fit results of our models integrated into SEM analyses were not disturbed by the phenomenon of multicollinearity. In the following chapters we present the SEM based methodological techniques used to reveal the potential moderating effect of PEU of pharmacy managers and GL of pharmacies in the stochastic relationship of the M&S's SOs and BP.

25.4. The introduction of SEM-based techniques applied to explore moderating effects

In addition to the hierarchical interaction and multigroup regressions, to explore the potential moderating effect of PEU and GL of pharmacies – influencing the relationship between Prospector, Analyser, Defender and Reactor SOs and BP – in our dissertation we performed a sort of methodological series of several SEM-based techniques. By the application *of the so-called multigroup and interaction moderation structural equations, as well as the moderated moderation analyses regarded as the combination of the elements of the previous techniques* – building up our measurement models step by step – we examined the potential moderating effect of PEU and GL in the relationship between M&S's SOs, the market effectiveness and the financial efficiency (Kline, 2010). Our goal was to draw – compared to the results of regression analyses – more valid and reliable conclusions via operationalisating SOs as latent constructs (Gefen et al., 2000).

25.4.1. The introduction of the multi-group moderation technique

For the identification and clarification of the roles of potential moderator variables the method of multigroup structural equations can only be used if the potential moderator is operationalised as dichotomous variable (Kaplan, 2000, Klarmann, 2011). *PEU* evaluations originally operationalised by the five-point Likert scale were transformed into a dichotomous form by „medium split" method, thus *we created the groups of pharmacy managers/pharmacies perceiving low and high degrees of environmental uncertainty*.

We also performed scale transformation for the ease of application of mathematical-statistical methods able to test the potential moderating effect of GL on the relationship between pharmacies' SO and BP. We created dichotomous, categorised variables from the original five response alternatives registrating the location of pharmacies based on the population of the settlement, where they operate. We formed two categories based on the follow-up consultations with active pharmacy managers and the leaders of HCP. *During the multigroup and interaction regression analyses, we coded pharmacies operating in urban environments by 0 and the ones in rural context by 1*.

In the following, *for the sake of simplicity, we classified pharmacies operated in settlements with a population above 10 000 as „urban" pharmacies and the ones below 10 000 as „rural" pharmacies*, the size of the two respondent groups was about the same. Based on the in-depth interviews key the stakeholders of HPRDS this distinction is justifiable, because interrelations between SO, BP and PEU by pharmacy managers of urban pharmacies

characterised by outstanding demand conditions is likely different from the one experienced in the case of rural pharmacies with more unfavorable factors. This has been proved later by our quantitative research results as well.

Structural models established to examine the relationship of SO and BP can be run in both groups formed on the basis of different values of each moderating variables. To explore moderation effects, we have to examine if there is a significant difference in the standardised regression weights between the independent and dependent constructs across the two groups (Bollen 1989, Jöreskog-Sörbom 1979). *In our thesis this means wheter the effect of the M&S's SOs on BP differs significantly or not between pharmacy managers perceiving high and low environmental uncertainty and between urban and rural pharmacies*. The additional advantage of the multigroup moderation is that it allows taking into account the measurement errors, it estimates the standardised regression coefficients with less errors and provides more information on the operation of the Segev scale – identifying Prospector, Analyser, Defender and Reactor SOs – and its psychometric characteristics (Matsuno-Mentzer, 2000).

During multigroup moderations, we tested differences between pharmacies characterised by low and high PEU and between urban and rural pharmacies on two levels. In the first case, we examined the difference between the entire models, while in the second between the specific effects of Prospector, Analyser, Defender and Reactor SOs on BP, along with various values of the dichotomous moderator. We used statistical analyses to reveal discrepancies both between the entire models and between the standardised regression weights quantifying the effect of specific SOs on BP. The significance of differences between model permitting the free movement of parameters *(„Unconstrained")* and the one fixing them at equal value *(„Constrained")* and the standardised regression coefficients *(„Path-by-path")* were examined by χ^2 tests (Homburg-Giering, 2001).

25.4.2. The introduction of the interaction moderation technique

Besides multigroup moderations, to explore the potential moderating role of PEU by pharmacy managers and GL of pharmacies on the relationship of SO and BP, the interaction moderation also proved to be an applicable methodology. *During this latter, by inputing SO and PEU – operationalised as latent variables of our measurement model in AMOS – into SPSS after the standardisation of the variables, we created the interaction variables between SOs and PEU as well as SOs and GL* (Klarmann, 2011). Subsequently, these variables and the corresponding values were entered again into AMOS. These transformations made it possible to quantify the interaction effects of SOs – originally oprationalised as latent variables – as well as PEU and GL on BP through the creation of their product terms.

25.4.3. The introduction of the moderated moderation technique

During SEM studies, we also explored the combined moderating role – played in the stochastic relationship of SO and BP – of PEU by pharmacy managers and GL of pharmacies. To this end, we used the so-called moderated moderation technique in case of both SAL and NP. *In moderated moderation (SEM) technique, according to the measurement level of moderating variables, the moderating effect of PEU (metric scale) has been examined by interaction moderation, while the effect of the GL (nominal, dichotomous) by multigroup moderation, under the same model* (Steenkamp-Baumgartner, 1998, Lowry-Gaskin, 2014).

Based on the interviews conducted with key stakeholders of HPRDS and the correlation

values shown in Table XCIV, relevant control variables were included into the moderated moderation analysis. The goal of integration the most important socio-demographic and site characteristics of pharmacies was to 1) examine whether the direction, strength and significance of the relationship between SO and BP change by filtering the effect of control variables, and 2) to identify additional factors contributing significantly to the evolution of SAL and NP of pharmacies. The important, originally latent theoretical constructs (PEU and M&S's SOs) included into *the moderated moderation* analyses have been integrated into our measurement model as manifest variables, after the inputational transformation (AMOS-SPSS-AMOS) detailed above, *so the fit indices can not be interpreted in this methodology.*

25.5. The interpretation of the results and fit indices of structural models

When calculating the fit indices of structural models quantifying the relationship of SOs and BP, and exploring the potential moderating effect of PEU and GL of pharmacies in the same relation, *we sought to preserve consequently the „original" structure of the theoretical and measurement models*. None of the items related to latent constructs were deleted, we only improved the fit of our models only by merging the error terms of relevant manifest variables and by reducing the values of *modification indices* (Steiger, 1990, Byrne, 2001, Kline, 2010).

Therefore, in some cases *the value of certain fit indices fell behind the threshold criteria set by the methodological literature* (Hu-Bentler, 1999). This happened mostly in the case of *the SRMR (Standardised Root Mean Square) indicator* – quantifiable by the square root of the difference between the residuals of empirical and hypothetical covariance matrices – showing the general fit of the models, its strict 0.08 threshold criterium was never reached in our structural models (Bentler-Bonett, 1980, Hooper et al., 2008).

At the same time, we have to make it clear that in all of the structural models if we had eliminated the manifest variables linked to the latent constructs with lower standardised regression coefficients, then the fit indices could have surpassed the threshold criterion of SRMR. However, with such measures *we would have lost important information* which could have damaged the main theoretical objective of our thesis, namely the theoretical relevance of the M&S strategic typology (Collier-Bienstock, 2009) within a regulated industrial setting.

In chapters 36-40, which presents the most important methodological part of our dissertation, we proceeded from simple models to the more complex structures. At each step – in order to increase the degree of transparency and interpretability – we also showed the graphic representation of the given structural model with the help of a „Print Screen" copy-pasted from AMOS. *For the interpretation of tables illustrating the results of regressions and structural models, we draw the attention to the fact that PEU scale was reverse-coded, which means that in order to facilitate responses, value 1 meant the total unpredictability, while value 5 the complete predictability*. The mathematical-statistical techniques used for the examination of our research questions and hypotheses are summarised in Table XXXII.

26. Evaluating the quality criteria of applied measurement instruments

The assessment of the quality of empirical research in social sciences can be performed basically by the detailed examination of four factors. These are the *objectivity, reliability, validity and generalisability* (Babbie, 1995).

26.1. Objectivity

According to the criterion of *objectivity*, the research process and its results are independent of the personality, the values and the motivation of the researcher, as well as his/her attitude and preconceptions regarding the studied subject (Porter, 1996b). *An empirical data collection and analysis is objective if it is carried out by two different researchers and the same result would be granted* (Neumann-Bódi, 2012). Research in social sciences can not be strictly considered as objective – as much as researchers strive to achieve that – since it is impossible to fully eliminate the subjective elements. With some self-criticism, we believe that if we would trust one of our colleagues with the testing of the main questions and hypotheses of our research, the results would probably be not the same, but rather similar to ours. Despite this, *we strived for objectivity in the theoretical and methodological stages of the thesis, especially when it comes to the objective presentation of the results and conclusions.*

When examining objectivity, we can evaluate *the objectivity of the research process, the data analysis and the interpretation of the results*. Our *empirical research* focused on a quantitative survey successfully conducted by the coordination of the president of the HCP who provided personal support. The structure of the survey focused mainly on the business- and sectoral-policy aspects of pharmacy management, representatives of HCP and responding pharmacists had only limited information about the scientific objectives of the study, the latent constructs and the suspected causal relations between variables. Though the fieldwork was not carried out by an independent market researcher, but by the authors themselves, we made significant effort in all phases of the data collection process to eliminate subjective elements.

There is little doubt concerning the objectivity of *the data analysis methods* due to the strict application criteria of mathematical-statistical techniques and their results are also evaluated along standard international thresholds. The subjective margin of researchers is limited here only to the use of stricter or more lenient thresholds from methodological literature when evaluating the results. The *interpretation of quantitative research results* can be mostly the terrain where subjectivity could gain ground. When drawing conclusions from raw results, we tried to correlate them to the relations validated in earlier studies and revealed in research literature. Originating from the idiosynchratic characteristics of HPRDS we put great emphasis on the objectivity of scientific, managerial and sectoral-policy recommendations as well, somewhat differing from what is experienced in the conventional strategic literature.

26.2. Generalisability

The determining quality gauge of the studies is that to what extent can the results gained from the sample examined in the empirical phase be extended onto the total population. The main criterion of generalisation is the representativeness of the sample. The representativeness means that the composition of the sample – according to relevant scientific, sectoral and socio-demographic characteristics – is equal to the composition of the population (Malhotra, 2009). The fulfilment of representativeness is often regarded – incorrectly – dependent of the higher sample size. A sample of 1 000 can be more representative than a large sample of 10 000 respondents if the structure of the previous based on specific characteristics (e.g. gender, age, residence, etc) better approximates the total population (Hair et al., 2010).

As we previously indicated, based on Tables XXIX-XXX, we managed to obtain representative sample for settlement structure, business performance, corporate legal form, but we did not for ownership structure and participation in horizontal and vertical forms of cooperation. So we formulated our conclusions cautiously – highlighting the proper

interpretation barriers – regarding the generalisation of our results.

26.3. Validity and reliability

Studies in social sciences also pay great attention to testing the validity and reliability of measurement instruments. We mentioned in connection with multi-item scales following confirmatory factor structure that the Segev (1987) scale identifying SOs and PEU scale developed by M&S (1978) were tested by statistical methods and found to be valid and reliable in previous studies. However, *the Hungarian translation of the measurement instruments, the slight modification of their content and formal elements and their adaptation for the characteristics of HPRDS required to further test their validity and reliability according to international statistical standards* (Campbell-Fiske, 1959, Nunally, 1978, Churchill, 1979, Peter, 1979, Anderson-Gerbing, 1988, Hair et al., 2010, Weiber-Mülhaus, 2010). We had the possibility to perform one part of validity and reliability checks before the large sample empirical study, i.e. in the development stage of measurement tools, while most of it was done during the mathematical-statistical analyses, after obtaining the survey results.

27. Validity

In the following, we test in detail the validity of the M&S's (1978) PEU and Segev's (1987) multi-item scale identifying SOs by a given mathematical-statistical toolbox. *We can not stress enough that the discriminant validity test of the Segev scale, able to identify M&S's SOs, served at the same time to answer research questions Q1 and Q2 of our doctoral dissertation as well*. We learned this way how many SOs can be observed (Q1) in the HPRDS characterised by bureaucratic coordination mechanisms and limited competitive intensity. We examined also in this chapter by running several exploratory (EFA) and confirmatory factor analyses (CFA) whether we can observe M&S's SOs in their original form in a sector heavily regulated by the government or different behavioural patterns can be identified. We also tested whether we can identify significant differences between the adaptation patterns of Prospectors, Analysers, Defenders and Reactors, i.e. we would meet clearly distinct SOs or not according to prevalence of their behavioural characteristics (Q2).

27.1. Face validity

During the systematic, but subjective testing of *face validity* researchers examine to what extent „at first glance" the multi-item scales measure the theoretical construct which is really intended to be measured (Malhotra-Simon, 2009). Face validity evaluates the correctness of the wording of items, mainly on the basis of stylistic, grammatical, lexical and scientific aspects. We ensured face validity of our measurement instruments by consultations with scientific researchers well versed in strategic management discipline, university professors, as well as pharmacists and leaders of pharmacists' advocacies particularly respecting the traditional terminology of the professional, pharmaceutical language (Chapter 21).

27.2. Content validity

This is an arbitrary and systematic consideration – often called *professional or expert validity test* – of how the content of the scale items depicts the measurement task (Hair et al., 2010). To increase *content validity*, we conducted discussions with strategic management researchers and key stakeholders of HPRDS. We found out which are the scale items not belonging to a specific theoretical construct and what domains of the theoretical constructs statements did

not cover fully (Chapter 21), i.e. where did we need to add or remove items due to the slight interpretational differences (Churchill, 1979). The matching of scale items to preliminary dimensions – SOs or environmental stakeholders – was performed by card task. The extent of convergence in evaluations made by professionals was also tested (inter-rater reliability).

27.3. Criterion validity

During the examination of *criterion validity*, researchers test whether the measurement scale based on specified variables is functioning according to the theoretical or the empirical-historical standards or not (Malhotra-Simon, 2009). In the case of measurement instruments identifying SOs and defining PEU, GL and BP, to gauge criterion validity we need to examine the assumed links between the constructs. The hypotheses of our dissertation focus on the development of the stochastic relations between the previously mentioned constructs, so their testing is at the same time can be considered as the examination of criterion validity of our measurement instruments.

27.4. Construct validity

Construct validity can be regarded as a complex set of criterion validity applied in high quality international studies. This means that the measurement of a latent or explicit construct is not distorted by systematic errors from another variable or another source, like the used measurement instrument or specific environmental conditions (Peter, 1981). Construct validity of measurement instruments is based on three pillars. These are *the discriminant, the convergent and the nomological validities*. Construct validity holds when scales used in the empirical research equally satisfy the criteria of convergent, discriminant and nomological validities. *We start the examination of construct validity by the mathematical-statistical analyses of discriminant validity which is simultaneously able to decide Q1 and Q2 research questions concerning the crucial findings of our dissertation*.

27.4.1. Discriminant validity

Discriminant validity examines to what extent the operationalisation of a theoretical construct leads to a different outcome, than the measurement of a related, but still interpretation-wise distinct construct (Bagozzi et al., 1991). According to a successful discriminant validity test *the latent variables and/or the associated scale items are only minimally correlated to scale items and/or latent variables which were developed for the operationalisation of other theoretical constructs* (Heeler-Ray, 1972). Discriminant validity maintains if measurement results of related variables differ, i.e. the specific latent variables of the scale and the associated indicators don not correlate with the measurement results of other constructs from which they should be different based on theoretical and sectoral experiences. The discriminant validity can be regarded as one of the most important criterion of high quality SEM studies.

Discriminant validity deserved a special attention in our thesis, as we could decide by *the examination of discriminant validity of Segev scale identifying SOs that how many of Prospector, Analyser, Defender and Reactor behavioural patterns can be observed in the HPRDS (Q1)*. In addition, we tested by mathematical-statistical methods associated to the analysis of discriminant validity to see whether we can *observe the original SOs of M&S or their variations to some degree with modified content elements, i.e. we encounter pure or hybrid, maybe „mix" environmental adaptation patterns in this regulated sector characterised by different contingencial characteristics than previously studied ones. Also, we*

highlighted it here whether we experience significant differencees between the behavioural characteristics of M&S's SOs identified in the HPRDS (Q2). Discriminant validity can be tested by a number of techniques, amongst which we used the six most dominant methodologies in case of the multi-tem Segev and M&S's PEU scales.

27.4.1.1. Exploratory factor analysis

One much-discussed, yet very effective and popular methodology for testing discriminant validity is the EFA. *If empirical data reproduce well the theoretically expected factor structure, then it can be considered as a significant step in determining discriminant validity.* This means that each latent construct (factor) is indeed loaded by the indicator variables (scale items) which are theoretically associated to it (Füstös et al., 2004).

Regarding the Segev scale our empirical data structure was suitable to execute EFA, as it satisfied the conditions for the application of principal component analysis (PCA). The Kaiser-Meyer-Olkin (KMO) index (0.854) was higher than the 0.6 threshold and we rejected the nulhypothesis of Bartlett's sphericity test (χ^2=1756,432 és p=0,000), so variables of data structure were not uncorrelated. More than ¾ of the elements of correlation matrix indicated significant interrelations and the coefficients fluctuated around the ideal, medium strength relation. The MSA (Measure of Sampling Adequacy) values measuring the strength of relationship of a given variable with all other statements exceeded 0.5, so no scale item was eliminated (Mitev-Sajtos, 2007).

In accordance with the original 4 SOs of M&S's typology, we tested first the four-factor solution (Table XXXIII). Eigen-value of each factor was higher than 1 and they explained 56,47% of variance of the data. However, the scrutiny of the composition of factors suggested an inconsistency in the content elements of strategic behavioural patterns. *The behavioural characteristics of SOs showed up as mixed which concerned mainly Reactors and Defenders.*

Results of EFA foreshadowed that *the four-factor solution does not seem to be relevant to the population of pharmacies (Q1) and the dimensions depicting the individual SOs were not loaded by the items relevant to the literature (Q2).* We examined the results of PCA in case of 3, 4 and also 5 factor solutions (Table XXXIII-XXXIV). The 2 factor solution did not prove to be a suitable structure, neither from theoretical, methodological nor sectoral perspective, because it classified into one factor the behavioural characteristics of Prospector and Defender SOs, both of which offer completely different answers for environmental adaptation.

Furthermore the proportion of variance (42,095%) explained by the two factors was significantly lower than in the case of the other factor solutions. *The five-factor structure is also not likely to map properly the number and composition of behavioural aspects of SOs observable in the HPRDS.* This is because the added value of the fifth factor to total variance explained (61,18%) is insignificant (5,034%) and no scale item correlated strongly with the fifth factor, while the third and fourth dimensions divided into two different „factors" exactly the robustly cohesive characteristics of Defender SO, which contradicts theoretical implications and our experiences of qualitative in-depth interviews,

Based on the still tolerable explained variance proportion (51,68%) and the professional review of the mixing behavioural characteristics, the three-factor solution fitted best to the observed data structure (Barna-Székelyi, 2009) (Table XXXIII). The indicated factor structure outlines that Defenders and Reactors representing two different SOs in the literature,

were loaded into a common factor. This result was anticipated based on the in-depth interviews with stakeholders of HPRDS, as between pharmacies following an unassertive, passive and inconsistent business behaviour we experienced rarely a sharp distinction.

After the principal component analysis (PCA), we also performed factor analysis of Segev scale using Maximum Likelihood (ML) method. Based on the experience, we can state that in case of 2, 3, 4 and 5 factor solutions the composition of resulting factor structures were almost unchanged. Results of Goodness of Fit tests showed no significant difference between the degree of fit of factor structures containing 2, 3, 4, and 5 SOs and the original data structure (2:χ^2=1218,205, df=349, sig=0,000; 3: χ^2=752,848, df=322, sig=0,000; 4: χ^2=588,235, df=296, sig=0,000; 5: χ^2=482,087, df=271, sig=0,000).

We explain in Chapter 44 (Discussion) the role of statements (DEF_5 and REA_4) „disrupting" the theoretically and methodologically consistent content elements and composition of the Prospector and Analyser SOs in the three-factor solution which is most optimal for sectoral specificities. Besides, in subchapter 26.4.1.2. along with the CFA results we discuss the doubts about the four-factor solution and further methodological confirmation regarding the plausability of the three SOs observed in HPRDS is demonstrated.

Application criteria of EFA analysis for the *Perceived Environmental Uncertainty* scale were met, the value of KMO indicator is 0,812, the nulhypothesis – that the variables are uncorrelated – of Bartlett's sphericity test was rejected (χ^2=1159, 936, p=0,000), the MSA values of Anti-Image matrix were all above 0.5 and more than 75% of the values in the correlation matrix indicated significant correlation. The seven-factor solution examined by the PCA explained 59,112% of the total variance of the data and Eigen-value of all factors were higher than 1. *The seven factors were identical to the latent theoretical constructs of the original PEU scale*. The dimensions of the perceived uncertainty construct in the behaviour of wholesalers, manufacturers, patients, competitor pharmacies, regulatory authorities and the HCP, also in the change of financial conditions were all loaded by their originally corresponding indicator variables (Table XXXV).

27.4.1.2. Confirmatory factor analysis

Confirmatory factor analysis (CFA) is the most standard tool for testing discriminant validity. Its role goes far beyond a simple "validity check", since carrying it out reveals whether multi-item scales used in previous international studies are applicable or not in environmental contexts having different characteristics, i.e. do they prove to be valid and reliable by scientific standards. *In our dissertation, during the CFA analysis of Segev scale identifying SOs, we performed CFA to compare fit indices of the three-factor solution identified in the EFA analysis to the results of the original 4 SO structure (Q1 and Q2).*

Relying on the theoretical model CFA is designed to generate the empirical variance-covariance matrix with the least difference (Hu-Bentler, 1999). *For the assessment of fit of empirical data structure and the theoretical factor model there is no any comprehensive index, thus methodological literature suggests the use of several indicators together* (Bentler-Bonnett, 1980). The most important fit index of CFA models derives from the χ^2 test and its nulhypothesis asserts that fit of empirical data structure and the theoretical model is suitable. The output of χ^2 test, *the CMIN/df, is a general fit indicator which compares the model's capability to predict the empirical variance-covariance matrix to the hypothetic baseline that "there is no any a priori theoretical base model"* (Weiber-Mühlhaus, 2010). The exclusive use

of the χ^2 test has been criticised since it is sensitive to sample size, number of estimated parameters in the model and normal distribution of integrated varibles. Therefore other fit indicators have been developed, which are described briefly below.

The RMSEA (Root Mean Square Error of Approximation) index quantifies, by the analysis of the residual terms, the deviation between the variance-covariance matrices predicted by the model and obtained by empirical observation (Byrne, 2001). It sets up a testable hypothesis to decide whether the RMSEA index falls into a given confidence interval or not (Chen et al., 2009). The *CFI* (Comparative Fit Index), the *NFI* (Normed Fit Index and the *TLI* (Tucker-Lewis Index) belong to the group of incremental or comparative indicators („modification indices") (Bentler-Bonett, 1980). These are used when on the original factor structure – by eliminating, interchanging items, or allowing the covariance between certain error terms – moderate modifications are carried out and the results are compared to a basic model specified in an earlier stage (Lowry-Gaskin, 2014).

First, we subjected *Segev scale* to CFA analysis. Due to the results of EFA, we integrated both the 3 and 4 factor solution models, the first grouping Defender and Reactor SOs into one dimension, while the other handling them separately (Figure X-XI). In line with our expectations fit indicators of the original four-factor solution produced lower values compared to the three-factor solution, which is the consequence of the „mixed" behavioural characteristics, discussed during the EFA analysis. Table XXXVI shows the fit indices of confirmatory factor models operationalising the 3 and 4 SOs as latent constructs. *Results were created by keeping the composition of original factor structures, without deleting any single indicator variable.*

According to Table XXXVI, the fit indices of the three-factor solution fulfil the criteria of methodological literature to a greater extent, than the factor structure containing 4 SOs. *Thus the Prospector, Analyser and Defender/Reactor SOs fit better to the data structure, and are markedly separated from each other. Hence, in HPRDS discriminant validity* exists and it is stronger than in case of the original classification of M&S, treating Defender and Reactor SOs as distinct, separated environmental adaptation patterns (Q1 and Q2).

Table XXXVII contains the evaluation of fit indices experienced during the CFA analysis of *PEU scale*. Results were developed by preserving the original structure of 7 factor model without deleting any single indicator variable (Figure XII). The table reveals that fit indicators of confirmatory factor model confirm the theoretical factor structure, thereby *corroborating the discriminant validity of this measurement instrument.*

27.4.1.3. The reliability of indicators

After running the CFA, we had an opportunity to examine *the reliability of indicators* for each latent variable which is one of the simplest test for the confirmation of discriminant validity. Tables XXXVIII-XXXIX-XL illustrate the results of CFA analyses of the 3 SOs (factor) Segev and PEU scales. We can conclude *that the standardised regression weight of neither indicator variable is less than the 0.4 value* specified by Churchill (1979), thus, neither of them had to be removed from any individual constructs of the model.

27.4.1.4. The examination of connections between latent constructs

The confirmation of discriminant validity by the most fitting way to its theoretical meaning is

the analysis of *the relations between latent constructs*. If after the CFA the covariance and correlation values between latent variables are high, then discriminant validity of the measurement instrument is doubtful (Bagozzi et al., 1991). In this case there is a risk that latent constructs are „blurred" with each other and, in extreme cases, scale items can measure only one, hidden latent factor. *To confirm discriminant validity after the CFA, we have to verify how strong relations we can find between latent variables.*

M&S's SOs can be considered as latent variables of the Segev scale. To answer our Q1 and Q2 research questions it was a key element to examine whether SOs in the 3 and 4 factor solutions' structures are significantly separated from each other or not. *Therefore in Table XLI, we indicated covariance and correlation values between latent constructs obtained after the CFA of factor models containing both 3 and 4 SOs.*

In the factor model containing 3 M&S's SOs connections between latent constructs are lower than in the original 4 factor classification, where we registered higher interrelations between Defenders and Reactors. In the case of the 3 factor solution, the covariance values and correlation coefficients between the Prospectors, Analysers, Defenders/Reactors are under the 0.5 level (Weiber-Mühlhaus, 2010). *It is important that in accordance with the theory, the sign of covariance and correlation values between Prospector and Defender/Reactor SOs, located at the two opposite ends of strategic adaptation continuum, is negative.* Thus, discriminant validity of Segev scale's 3 factor solution is confirmed once again, Prospectors, Analysers, Defenders/Reactors are significantly distinct from methodological aspect as well.

As the results of Table XLII clearly show, *we did not experience higher covariance and correlation than the allowed 0.5 in any of the latent factors of the PEU scale.* Based on the findings, discriminant validity of this measurement instrument was also confirmed.

27.4.1.5. The comparison of alternative CFA structures

Discriminant validity *can be also confirmed by running two consecutive CFA*. The first examines the fit of the original factor structure, while in the second we fix covariance parameters indicating the relations between latent constructs to the value of 1. This assumes that there is a function-like relationship between the measured latent variables. *If fit indicators of the second factor model are worse than the ones of the first, discriminant validity of the measurement instrument can be confirmed* (Fornell-Larcker, 1981). Table XLIII illustrates the results of CFA models assuming relations between the SOs and carried out with fixed covariance values equal to 1 between latent constructs, and also illustrates the comparison to the results of the original CFA in case of both the 3 and 4 factor solutions of Segev scale. It is evident that if we assume a totally interdependent relation (cov = 1) between the M&S's SOs, then fit indicators of models are also deteriorating in the 3 and 4 factor structure. Hence, *discriminant validity of the Segev scale is again confirmed also by the „discrepancy" method.*

In the case of PEU scale, Table XLIV is comparing fit indicators of the original CFA analysis and the one fixing the covariance values of latent constructs at 1. The majority of fit indicators of the second model also meet the academic threshold criteria, but are slightly worse compared to the values experienced in the original confirmatory factor model. Discriminant validity of the PEU scale of M&S was confirmed again. *It is important to note that the minor differences between the two models is ideal from both methodological and theoretical point of view, since it indicates that we measured a single, robust latent construct (PEU), but the dimensions forming the construct are still distinctly differing from each other.*

27.4.1.6. Fornell-Larcker's criterion and validity of cross-loadings

A strict condition for the confirmation of discriminant validity is the so-called Fornell-Larcker criterion (Fornell-Larcker, 1981). According to this, the variance of a latent construct is influenced more by its own indicators than by indicators associated to another latent construct, and the indicators of a specific latent construct explain to lesser extent the variance of another latent construct. *The Fornell-Larcker criterion is met if the AVE (Average Variance Extracted) indicators of all latent constructs are higher, than the square of the correlation between a given construct and any other latent constructs* (Farrell, 2010). In Chapter 27.4.3. concerning convergent validity we discuss in a more detailed way the meaning and calculation of AVE indicator. The so-called *cross-loading validity* is very similar to Fornell-Larcker criterion. According to the former the correlation between a given indicator and its latent construct is higher, than the measured correlation between the given indicator and any other latent construct (Henseler-Ringle, 2010). In Table XLV, *we show the AVE values of the constructs of Segev scale operationalising M&S's SOs* and the square of the correlations measured between them, both in the case of the 3 and 4 factor solutions.

The structure of the 4 factor Segev scale does not meet the Fornell-Larcker criterion as expected, because the high correlation between Defender and Reactor SOs exceeds the lower value of the two constructs' AVE indicator. However, Fornell-Larcker criterion is met in the case of 3 factor structure, as the AVE indicator of all the constructs exceeds the square of the correlation coefficients measured between any two constructs. Thus, *discriminant validity of the Segev scale having a 3 factor structure is confirmed by the Fornell-Larcker methodology*. Table XLVI depicts the AVE values of the constructs of *PEU scale* and the correlation coefficients measured between them. *Fornell-Larcker criterion is met* as the AVE indicator of all latent constructs is higher, than the square of the correlations measured between them.

Due to length limitations of the thesis, we could not present in detail the results of the cross-loading validity analyses. However, *the criteria of the cross-loading validity were also met,* since we could not find neither in the PEU scale, nor in the 3 factor Segev scale identifying Prospector, Analyser and Defender/Reactor SOs, any indicator variables displaying a correlation higher with another latent construct than with its own.

27.4.2. Summary of the results of discriminant validity checks

We dealt exhaustively with the issue of discriminant validity which is really important to answer our Q1 and Q2 research questions. After a fragmented description of evaluations, we summarised in Table XLVII the results of methods testing discriminant validity of PEU scale and the 3 and 4 factor solutions of Segev scale identifying SOs. *This proves that discriminant validity of PEU scale was confirmed by all the mathematical-statistical tests.* Discriminant validity of the original, 4 factor structure Segev scale operationalising M&S's SOs was not confirmed by several tests. *However, the 3 factor solution earlier approved based on the results of the EFA and CFA analyses, satisfied the criteria of discriminant validity.*

Based on our results, to answer our Q1 research question regarding the number of M&S's strategic behavioural patterns observable in the HPRDS, we can state that pharmacies are pursuing 3 SOs. The items of the original Defender and Reactor behavioural patterns of environmental adaptation were largely loaded on one common factor, which *we denoted as Defender/Reactor SO*. According to this, in our answer to research question Q2, we can

confirm that *M&S's SOs can not be observed in their original, pure form* in this environment characterised by bureaucratic coordination mechanisms and limited competitive intensity, *as the Defender/Reactor can be seen as a certain hybrid or mix of Defender and Reactor behavioural characteristics.*

For the grounding of our response to Q2 research question, we not only verified the distinction of SOs, but we tested the differences in the manifestation of certain behavioural characteristics of Prospectors, Analysers and Defender/Reactors relevant in the HPRDS. *We tested the significance of the overall differences* between the means of evaluations given by pharmacists concerning the behavioural characteristics using *ANOVA*, *while we performed post-hoc Tukey, Scheffe and Bonferroni tests to pairwise compare the SOs* (Table XLVIII).

Based on the F values regarded as the output of the variance analyses, we did not experience a difference only in the manifestation of REA_4 – „In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients" – behavioural characteristic between *Prospector, Analyser and Defender/Reactor SOs. Thus, Prospector, Analyser and Defender/Reactor SOs observed in HPRDS and pursued by public pharmacies are significantly different based on their behavioural characteristics*, *so we can identify three fairly distinct strategic behavioural patterns*. Therefore we can refine our answer to research question Q2 that while we could not observe the M&S's SOs in their original form due to the „overlap" of Defenders and Reactors in the HPRDS, we can define a significant distinction of the three relevant SOs observable in this special sectoral context.

It does not change our results, only puts them into a more nuanced perspective and bears a bit different shade of interpretation that the post-hoc Tukey, Scheffe and Bonferroni tests used for the pairwise comparisons indicate that individual SOs do not differ so sharply from each other based on specific behavioural aspects. In particular, we found no such significant difference in the relation between Analysers and Prospectors. This suggests that *we found significant differencens between the general behavioural patterns observed in the environmental adaptation of pharmacies*, *but between the manifestations of certain content elements of the SOs there is a smaller discrepancy* in the strategic-level management practice of Prospector, Analyser and Defender/Reactor pharmacies. We detail this phenomenon and the results concerning the REA_4 statement in the Discussion (Chapter 44) of our doctoral dissertation.

27.4.3. Convergent validity

It is a requirement in social and natural sciences as well that one construct could be measured with at least two methodology (Churchill, 1979). Convergent validity examines, in its classical sense, *the extent of which the instruments applied for the operationalisation of given constructs lead to the same result* (Cunningham et al., 2001, Farrell, 2010). For example, is the room's height turns out to be the same when we use a mesauring tape, a folding rule, our own eyes or a laser range-finder? During research, the operationalisation of constructs is often limited to the use of single measurement instrument, *and performing multiple measurement methods for the same constructs simultaneously is rarely feasible.* In strategic management parallel application of several questionnaires and in-depth interviews or focus group discussions may prove to be the most realistic option for this.

As we mentioned, unfortunately it is a rare possibility that a given theoretical construct could be measured by several quantitative methodological techniques in the same study (Demerouti

et al., 2003). In the academic profile of our dissertation convergent validity had an important role, since *we applied several identification techniques for the observation of M&S's SOs*. The degree of convergence in results made by different measurement instruments was examined by association tests and to answer our Q3 research question the sample distribution ratios of Prospector, Analyser, Defender and Reactor pharmacies identified by the 3 various strategy extraction techniques were compared via statistical tests. We deal with the examination of convergent validity in its classical approach in Chapter 32.

In this chapter, we persent which standard mathematical-statistical tests can be used by researchers to examine convergent validity of the multi-item scales integrated into our research. In empirical studies where only one measurement instrument is available, *international methodological literature considers conventionally AVE indiactor as the most accepted tool to test convergent validity* (Fornell-Larcker, 1981). The criterion for the confirmation of convergent validity is that AVE indicator of latent variables operationalised by multi-item scales should exceed the 0.5 threshold value (Baumgartner-Homburg, 1996). The average variance explained indicator can be calculated by using the following formula:

$$AVE= (\sum\lambda_i^2)/ [(\sum\lambda_i^2)+ \sum(1- \lambda_i^2)] = (\sum\lambda_i^2)/k$$

The $(\sum\lambda i^2)$ used both in the numerator and denominator of the formula denotes the sum of square of the standardised regression weights of all indicator variables associated to the given latent construct, while *k* is the number of indicators of the construct. Table XLIX shows the AVE indicators of the dimensions of PEU scale and Segev scale identifying SOs, both in the case of 3 and 4 factor solution.

AVE indicators of the latent constructs exceeded the 0.5 threshold value in the case of PEU scale of M&S and the Segev scale identifying SOs, so we can confirm the convergent validity of our main measurement instruments. In the Segev scale, we calculated AVE values for both the original 4 factor and the 3 factor solution better fitting the data structure. As expected, the AVE indicators of the latter are much higher, so in this case the convergent validity of the measurement instrument is also stronger.

27.4.4. Nomological validity

The nomological or conceptual validity is usually the most common met criterion of construct validity which can be partly explained by the fact that no rigorous mathematical and statistical methods were developed for its testing (Peter, 1981). The nomological validity is therefore a qualitative measure of construct validity and its existence depends on the extent to which constructs examined in a given research can be regarded as a close-knit nomological, theoretical as well as industry-specific and practical "network".

SO, PEU, GL and BP are considered as the four main scientific constructs of our dissertation. These four constructs shape a strongly coherent, interdependent conceptual network from the perspective of business economics, strategic management and marketing, which is supported by the the previous studies examining the relationships between them on numerous occasions (Nandakumar et al., 2010, Parnell, et al., 2012). The examined research questions and the obtained results related to this nomological network were described in detail in the literature review chapters of our thesis (Table XII). *Thus, the scientific constructs used in our doctoral research really form a coherent theoretical net, fulfilling the criteria of nomological validity.*

27.4.5. The evaluation of construct validity

Overall, we can ascertain based on the analyses of nomological, convergent and discriminant validities that conditions of *nomological validity of measurment instruments applied in our doctoral research were fulfilled, while the criteria of convergent and discriminant validity were also met almost fully, hence the construct validity in our study can be confirmed.*

28. The consequences of discriminant validity examinations regarding the research questions and hypotheses of our doctoral dissertation

However, it is an interesting theoretical question of strategic management whether the Defender/Reactor SO 1) can be considered to be a simple mix of the Defender and Reactor strategic behavioural patterns or 2) forms a completely independent, hybrid SO based on the organic configuration of the various behavioural characteristics. To answer this question, of course, requires further studies and modifications on the measurement instruments, but we can draw several exciting insights from the scrutiny of the 3 factor structure of Segev scale (Table XXXVIII). In our opinion, Defender/Reactor SO examined in the HPRDS could be regarded more like as a mix approach, rather than an independent, organic hybrid SO. Our statement is is supported by the following methodological facts:

- According to the factor loadings, Defender behavioural characteristics constituting the Defender/Reactor SO closely correlate with the Defender/Reactor factor, while the connection of the Reactor behavioural aspects is less strong to this dimension, their factor loadings are significantly less than those of the Defender items.

- We did not observe any „mixture" in the structure of the items constituting the Defender/Reactor SO (factor), Defender items are situated „below and beside" each other and are „followed" by Reactor statements located also „below and beside" each other.

- If we examine Table L depicting the correlation coefficients between the behavioural characteristics of the Defender/Reactor SO, we can see that correlations between Reactor behavioural characteristics are usually higher, than the correlation coefficients between the Reactor and Defender behavioural characteristics.

- Accordingly, the correlation values between Defender behavioural characteristics consistenly exceed the correlation coefficients between the Defender and Reactor behavioural aspects (Table L).

The above observations therefore suggest that *in Defender/Reactor SO 1) the Defender behavioural characteristics are linked closely to each other, 2) the Reactor behavioural characteristics are also strongly related to each other, 3) the two groups of behavioural characteristics are relatively distinct*. However, if Defender/Reactor SO observed in the HPRDS is regarded as a strategic mix – and not as an independent, hybrid SO based on the organic configuration of the behavioural characteristics – then *the question arises: is it more similar to the Defender or to the Reactor SO?* The question is relevant not only from theoretical, but from a sectoral point of view, as it is not at all trivial that the attributes of a conscious and viable strategic behavioural pattern (Defender) characterise predominantly pharmacies pursuing similar SOs or rather the behavioural features of an inconsistent and doomed SO (Reactor) prevail in their case.

To answer this question, we summarised in Table LI how certain characteristics of the Reactor and Defender behavioural patterns were evaluated in the Segev scale on average by pharmacy managers listed under the Defender/Reactor SO. This reveals that *these pharmacists gave higher values in general to the Reactor behavioural characteristics and consistently judged their prevalence as stronger than those of the behavioural aspects of Defender SO.* In addition, Table LII shows that *the average evaluation assigned by pharmacy managers to the behavioural characteristics of Defender SO of the 89 pharmacies identified as Defender/Reactor were exceeded – with a few exceptions by a statistically significant degree – by the average evaluations given to the behavioural aspects of Reactor SO*.

In the case of Defender/Reactor pharmacies, the dominance of Reactor behavioural characteristics is reinforced also by the original results of the self-typing paragraphs. As we show it at the classical convergent validity tests of the measurement instruments identifying the SOs (Chapter 32), during the use of the self-typing paragraph method extracting SOs on a nominal scale in explicit form, among the pharmacy managers only 10 rated the SO of their pharmacy as Reactor, while 80 reported that their company pursues Defender SO.

In contrast, based on the results of the more valid and reliable multi-item Segev scale operationalising SOs as latent constructs, the number of Reactor pharmacies drastically increased from 10 to 80, while that of Defenders radically decreased from 80 to 45. *Based on this, pharmacies pursuing Defender/Reactor SO sampled in our doctoral research are more likely to resemble to the inconsistent Reactor SO*.

Our statement is also confirmed by the results of the regression and structural models – established for analysing the relationship between SOs and BP – presented in the latter parts of our thesis (Chapter 35-40). According to these, *BP of pharmacies pursuing Defender/Reactor SO significantly in the case of SAL and insignificantly in the case of NP, but falls behind the performance of Prospectors and Analysers*, which is largely in line with the theoretical implications of M&S.

Thus, we identified 3 SOs of M&S in the HPRDS, of which the Defender/Reactor SO forms a unique, „mix" behavioural pattern, characterised – despite the higher loadings of Defender items – dominantly by Reactor attributes. However, this has an important impact on the answers to the research questions of our doctoral dissertation and the testing of its hypotheses. The reason of this is that our research questions and hypotheses – stemming from the implications of M&S strategic theory and from the experiences of in-depth interviews with key stakeholders of the HPRDS – all established the assumed relationships regarding the 4 original SOs – Prospectors, Analysers, Defenders and Reactors – of the M&S strategic typology and the other constructs (BP, PEU, GL) examined in the thesis. *Due to the relevance of the Defender/Reactors observed in the sectoral context of our research and the predominant behavioural characteristics of Reactors within this „mix" SO, we came to two important decisions*:

1. *We eliminate* all our research questions and hypotheses concerning Defender SO and its interrelations to other constructs of our thesis (BP, PEU, GL, socio-demographic characteristics and site attrubutes).

2. *We evaluate empirical results* obtained for *Defender/Reactors* based on the content elements (e.g. relationships) of research questions and hypotheses *set up for Reactors*.

All of this, from the point of view of the interpretation of results, is reflected in the changes indicated in Table LIII. Given the findings of discriminant validity tests affecting greatly the answers to our research questions and hypotheses, we continue our thesis with the reliability tests of our applied measurement instruments (multi-item scales of Segev and M&S).

29. Reliability

In addition to insuring validity, an important criterion for the measurement instruments (i.g. multi-item scales) used in scientific studies is that they have to offer consistent results when the measure is performed repeatedly on a given variable (Füstös et al, 2004). Taking into consideration that the appropriate resources are rarely available to repeat the data collection process, academic studies in most cases examine *the alternative of reliability based on internal consistency.* Its wisely accepted measure is the Cronbach's Alpha coefficient, which is the average of the correlation coefficients calculated from every possible „split" into two parts of the scale items associated to the measurement of a given construct (Cronbach, 1951).

During the scale developing pre-tests conducted with pharmacy managers, we had the opportunity – with the elimination, reformulation or addition of certain items – to meet the 0.7 threshold value formulated by Nunally (1978) or at least the 0.6 threshold value proposed by Malhotra for scales still in the development phase (Malhotra-Simon, 2009). Naturally we could have improved reliability coefficients by item eliminations after obtaining the survey results, but it is less accepted when we validate such scales in domestic context which were already applied and tested in past international studies (Peter, 1979). *The elimination of items less supportive in the measurement of certain constructs could cause a loss of information in a given situation, so we tried consistently preventing this during the whole data analysis process – thus, in the SEM analyses, too – of the doctoral research*. In Table LIV, we presented the values of Cronbach's Alpha indicators gained for the reliability of the multi-item scales operationalising our main constructs (M&S's SOs and PEU).

As seen, *Cronbach's Alpha indicators of all latent variables of the PEU scale exceeds the expected 0.7 threshold value*, but the items regarding Reactors from the Segev scale identifying the four original M&S's SOs were not proved to be sufficiently reliable. This was expected based on the pre-tests of qualitative research and the experiences of discriminant validity examinations. According to the EFA and CFA analyses of the Segev scale, in HPRDS we differentiated 3 relevant M&S's SOs instead of the 4 original ones. Therefore, we also indicated *the Cronbach's Alpha indicators of Prospector, Analyser and Defender/Reactor latent constructs in Table LIV. The latter is greater than 0.7,* so the reliability based on the internal consistency of these dimensions can be confirmed.

We can find several criticism regarding Cronbach's Alpha indicator in the statistical literature (Graham, 2006), of which we have to highlight that *by increasing the number of items the value of the coefficient can be increased arbitrarily.* Another important criticism is that *its application for measuring the reliability of latent constructs is limited,* since at the beginning researchers developed its methodology based only on explicitly measured, i.e. directly operationalised (asked) variables (Sijtsma, 2009). Therefore studies using structural models prove with additional indicators the reliability of estimated latent constructs.

Among them we have to highlight the so-called *Composite Reliabilty (CR) indicator* and *the indicator reliability* associated with each individual indicator (Raykov, 1998). We already discussed the examination of the latter during the confirmation of discriminant validity and

we determined that indicator reliability is also confirmed in the case of PEU and Segev scales. *However, the value of Composite Reliability can be considered the most important overall reliability indicator when estimating latent constructs during SEM analyses*, and it can be calculated by the following formula (Weiber-Mülhaus, 2010).

$$CR = (\sum\lambda_i)^2/[(\sum\lambda_i)^2 + \sum(1- \lambda_i^2)]$$

The $(\sum\lambda i)^2$ shown in both the numerator and denominator of the formula is the square of sum of standardised regression weights of all the indicator variables associated to the given latent construct. *According to the criterion, CR value of every latent variable used in the model has to reach 0.7,* but some authors accept also the 0.6 threshold value (Backhaus et al., 2008).

In Table LV, under the Segev scale identifying SOs, we indicated the constructs' reliability values in case of both the original 4 and the 3 factor – relevant after the discriminant validity tests – structure solutions. In the case of multi-item scales applied in our research, CR values of the individual latent constructs generally exceed steadily the 0.7 threshold value regarded as the criterion of methodological literature. *Therefore, measurement instruments used in our dissertation examining the relationships between SOs, PEU, GL and BP in the HPRDS can all be considered reliable.*

30. Common method variance

Prestigious scientific journals lately are increasingly excepting their authors *to avoid distortions stemming from the so-called Common Method Variance (CMV)* in survey-type examinations by performing additional validity and reliability tests (Kline et al., 2000). CMV is especially prone to cause problems in cases, *when the independent and dependent constructs of the questionnaire are both evaluated by a single respondent and the evaluations were operationalised on a scale based on subjective judgement (e.g. Likert-scale) of respondents* (Podsakoff-Organ, 1986, Lindell-Whitney, 2001, Spector, 2006).

According to general methodological experiences CMV results in a false internal consistency due to the single respondent design (Malhotra et al., 2006), *as respondents may be inclined to provide compatible, professionally consistent answers to the statements of the multi-item scales, even if their real evaluations and actions deviate from those.* Due this „item-to-item" and „item-to-total" correlations will be artificially high, even though the applied *measurement instrument suffers from systematic errors* (Chang et al., 2010). Validity distortions stemming from CMV – apart from efforts to provide consistent answers – may be induced by other factors as well, such as the „compulsion" to provide socially accaptable answers, lack of information and knowledge or environmental stimuli of the research situation that disturb the respondent etc. (Podsakoff et al., 2003).

We have the Likert-scale surveys used in our research filled out by a single respondent (the pharmacy manager) either, which anticipated the problem of CMV and the necessity to handle it. Amongst the procedures used to deal with the CMV problem scientific literature differentiates qualitative methods applied before the data collection process, and „post-hoc" mathematical-statistical techniques. *To minimise CMV we took the following „precautonary" steps before data collection* (Lindell-Whitney, 2001):

- During the data collection process *we asked pharmacy managers*, as it is probably them – and not their employees – who are *in possession of knowledge required to fill out a*

strategy-themed questionnaire, and are also less effected by the factors of the need to comply as detailed above (Tan-Tan, 2005).

- *We did not place the independent and dependent variables directly following each other* within the survey, but wedged questions regarding sectoral policy and tactical level management between them.

- First we inquired pharmacists about independent variables, and only continued with introducing dependent variables after that, *in order to avoid a strong influence of an early inquiry about BP on the respondent's evaluations provided for the independent variables* (Pfeffer-Salancik, 1997).

- We placed questions regarding BP of pharmacies among items pertaining to pharmacies' several other socio-demographic characteristics and site attributes. With this we intended to achieve that *BP indicators „blend into their environments" and are not perceived as questions with an emphasised focus by the respondents.*

- We placed the question block pertaining to socio-demographic characteristics, site attributes and BP indicators at the end of the questionnaire, *as we easily could have detered pharmacicts* from answering the most important constructs – PEU and M&S's SOs – of the research *by asking about concrete figures regarding the more confidential areas of pharmacy management on the first page of the questionnaire*.

- According to methodological literature anonymity of respondents and confidential treatment of received answers increase the validity and reliability of results (Babbie, 1995). Therefore we placed the following caption in the request cover letter accompanying the questionnaire: *The survey is voluntary and anonymous, and we kindly ask you not to fill out the „Sender" space found on the return envelope. Completed questionnaires are received by the Department of Marketing of Corvinus University of Budapest. We treat every returned surveys with strict confidentiality, and we assure you that your answers can not be provided to a third party even in their anonymous form (Act CXII., 2011).*

Following the qualitative „cautonary" measures taken before the data collection by survey we turned our attention towards *the testing of the CMV problematics by mathematical-statistical methods*. We strived to perform as many checks common in scientific literature, and complying with the nature of our research and improving validity, as possible (Spector, 2006):

1. *The Harman one factor test* is a commonly used method for post-hoc identification of distortions caused by CMV (Williams-Brown, 1994). It is based on the experience that when the *single – i. e. the first – dimension explains more than 50% of the total variance* after the EFA analysis of the multi-item scales operationalising the latent constructs in the empirical research, then that applied measurement tool distorts the received results (Richardson et al., 2009).

We ran the Harman one factor test both for the M&S's PEU and Segev scales identifying SOs. Table LVI depicts the results of the unrotated – as required by methodological criteria – (Spector, 2006) single factor solutions performed in SPSS with various methodological extraction techniques (PCA, ML). According to the Harman's CMV test the effect of the first factor, explaining a given proportion of total variance does not even approach the threshold of 50%, i. e. *the validity of multi-item scales answered by a single respondent were not*

influenced by the distortion stemming from the measurement method of choice.

2. The next methodology suitable for testing CMV is *the Common Single Latent Factor – CSLF – analysis*. The method attaches an additional latent construct to the applied multi-item measurement model (Figures XIII-XIV-XV). By quantifying all connections between the new common, latent variable and the manifest variables of the original model we receive the common variance, which according to CMV theory is the result of the distortion caused by the single respondent design and the single measurement methodology. *During CSLF analysis two conditions must be met in order to confirm the validity of applied measurement instruments* (Podsakoff et al, 2003, Lowry-Gaskin, 2014).

- The square of the regression weights between *CSLF and original manifest variables must not exceed the threshold value of 0,25*, otherwise the variance from the common method is disturbingly high.

- *No significant change occurs in the regression weights between original latent constructs and manifest variables by introducing CSLF*, thusly demonstrating that the common variance explained by the new, latent variable is low.

According to Table LVII square of the regression weights between the additional common, latent variable (CSLF) and the original manifest variables does not reach the threshold value of 25%, *therefore validity distortions stemming from CMV are not significant for multi-item scales identifying either PEU or SO*. The other condition of CSLF method – namely the stagnation of the regression weights of the original latent variables and the manifest variables connected to them – is met as well, as based on the χ^2 tests ran after integrating the common latent variable neither the complete models, nor the individual regression weights differed significantly from each other.

3. *The marker variable technique* can be regarded as an expansion of the CSLF method, and may be the most accurate test of variance stemming from common measurement instruments (Williams et al., 2010). The essence of the marker variable technique, which was based on the basic idea of partial correlation, is that parallelly to the CSLF added earlier it integrates a further latent construct into the multi-item measurement instrument. Demonstrating the covariance of the marker variable and the original, latent constructs is meant to reduce the variance stemming from a common method, *as the effect of CSLF on manifest variables has to decrease by incorporating a latent variable that seemingly „does not fit in"*. This basically amounts to filtering the partial effect. The marker variable hence is a construct that – according to the assumption of most reseachers – shares a slight connection with other latent variables.

In our research we examined the validity of PEU and Segev scales via the method of marker variables. *Based on the set of variables we elected additional marker constructs for the Segev scale from the PEU scale, and vica versa, for the PEU scale from the Segev scale*. Considering the length limitations of our thesis we showcased marker variable testing of CMV solely in Figures XVI and XVII, wherein we only depicted the inclusion of a single marker variable – the Segev scale's Defender factor for the M&S's PEU scale, and the Regulatory Authorities factor of the PEU scale for the Segev scale – for both the M&S's PEU scale and Segev's scale identifying SOs of M&S.

Table LVIII illustrates the results for the Segev scale obtained when the latent constructs of

the PEU scale were integrated as marker variables parallelly to CSLF. It is evident that the value of common variance respectively decreased further compared to the experiences of CSLF method by the individual inclusion of PEU scale's latent constructs, *so validity distortions stemming from CMV are negligible in case of Segev scale operationalising SOs*. According to Table LIX common variance did not decrease in case of either 3 or 4 factor solutions by including CSLF and marker constructs additionally attached to the PEU scale, yet it even slightly increased. *Based on this the validity of responses given to the PEU scale are influenced by the distortion originating from CMV, if only slightly*.

Table LX – summarising the results of the 3 methodologies used for the examination of CMV – suggests *the negligible presence of the variance caused by the common measurement instrument*, and it is solely based on the marker variable technique that we can assume a minimal distortion of validity in the responses provided for the PEU scale.

31. Non-response bias

Validity, reliability and especially generalisability of results – apart from the differences between the composition of the sample and the total population – could strongly be influenced by *the degree of discrepancies found between early and late respondents* based on the variables essential to the research and the main socio-demographic characteristics (Armstrong-Overton, 1977). The basic assumption of the so-called *„non-response bias"* problem is that significant differences encountered between the first and second wave of responses to a survey research can possibly lead to serious distortions (Groves et al., 2001). This assumption is based on the fact that *respondents of the questionnaires received during the second wave showed similarities rather with the group of non-responders* (Jobber-Saunders, 1989). If the phenomenon of non-response bias prevails, the ratio of respondents – answering the questionnaire during the later wave in a „negligent", inconsistent way that provides low quality data – may increase, *which necessitates the splitting of the sample into two sub-samples, as well as the comparison of those* (Gatignon-Xuereb, 1997).

In our survey exploring strategic behaviour of pharmacies we examined non-response bias in relation to main theoretical, as well as main socio-demographic and sectoral characteristics. We did this based on a breakdown to the geographical units that served as the location of data collection, as we received permission to conduct our research in Budapest and 4 other counties. *We determined the sub-samples of early and late respondents in each regional unit by using the „median-split" method based on the number of days between dispatching the questionnaires and receiving the answers, as suggested by the postal stamp's date on the return envelope*. We inspected significant differences between early and late respondents via analysis of variance in case of metric (scale) variables, and by contingency tables (cross-tabs) in case of nominal variables. Table LXI quantifies the results of non-response bias tests of examined individual variables, broken down to counties.

Despite the large number of variables included in non-response bias test we found only 5 cases, *in which answers received during the first wave showed a significant difference to those registered in the second one.* Furthermore, results of the in-depth interviews conducted afterwards with representatives of HCP could not shed light on the possible professional causes of differences, either. Based on the theoretical, socio-demographic and sector-specific attributes the first wave of respondents showed no significant differences to the second wave in either of the counties, thus we could not assume respondents from the second wave would rather be similar to the population of non-respondents. *Thus, validity, reliability and*

generalisibility of results of our research are not distorted by non-response bias problematics.

32. The identification of Miles and Snow's strategic orientations and the comparison of their distribution ratio

Answering research question Q3 regarding the methodology of identifying M&S's SOs can be viewed as a main empirical challenge of our dissertation. Based on the turbulent changes experienced within the regulatory environment and the results of in-depth interviews conducted with pharmacists we assumed in our research question Q4, that the distribution of SOs identified within HPRDS is not identical, *meaning that the behavioural patterns of M&S can not be observed in a close to equal ratio*. In our questionnaire aiming at the examination of strategic-level management processes of pharmacies we used 3 different measurement instruments in order to identify SOs followed by pharmacies.

When answering our research question Q3 we examined the convergent validity of the operationalisation procedures aimed at identifying M&S's SOs – namely the self-typing paragraph technique, the multi-item Segev scale (1987) and the method of objective indicators. In the classical scientific-methodological sense convergent validity is met, when a phenomenon is examined via a multitude of measurement instruments, and the application of those instruments yields near identical results (Peter, 1981, Babbie, 1995). Our research question Q3, regarding convergent validity, and Q4, dealing with the comparison of the distribution ratios of M&S's SOs' to each other show a strong, related content.

Below we first start by presenting the results of the three measurement tools used for the identification of pharmacies' SOs. Following that *we examine the sameness of the results of the techniques that helped us to classify pharmacies to SOs (Q3), and then proceed to compare distribution ratios of pharmacies following different M&S's SOs to each other via statistical tests (Q4)*. We point to the detail, that besides Prospector, Analyser and Defender/Reactor SOs identified in discriminant validity examinations we also evaluated the results stemming from measurement instruments operationalising the original 4 behavioural patterns of M&S.

32.1. The strategic orientation of pharmacies according to the results of original measurement intruments

Regarding the operationalisation of M&S's behavioural patterns it is first important to state that *we managed to apply only two of the originally planned strategic extraction techniques* aimed at the identification of Prospectors, Analysers, Defenders and Reactors. Contrary to the multi-item scale of Segev and the self-typing paragraphs, *the method of objective indicators unfortunately could not contribute to assigning pharmacies to SOs in our research*. Probable reasons for this are that 1) pharmacists refrained from answering questions concerning performance and strategic-level management indicators that were required for the classification, or 2) they provided distorted, unrealistic data. Practical unusability of the objective indicators' method is a methodological deficiency of our research, as lacking their assignment results only two of three methodologies required for a robust identification of pharmacies' SOs were available to us. We detail consequences of this in the chapters *of Discussion* and *Directions of future* research.

Lacking the results of objective indicators *we were only able to compare the frequency and distribution of SOs identified by self-typing paragraphs and Segev scale* in order to answer

our research question Q3. Table LXII depicts the results of the self-typing paragraph method, offering the original 4 strategic alternatives and the multi-item Segev scale, operationalising the 4 strategic behavioural patterns, i. e. the assignment of pharmacies to SOs.

For the identification of Prospectors we received near identical results by applying the two original measurement instruments. We however experienced a quite notable discrepancy in case of Analysers, as according to the self-typing paragraph method 1/3, yet based on the results of Segev scale only approximately 1/5 of pharmacists assigned their firm into this SO. We registered an even greater difference between the results of self-typing paragraph technique and Segev scale when identifying Defender and Reactor SOs. *Self-typing paragraph method identified nearly twice as many Defenders in the sample, while it greatly underestimated the presence of Reactor pharmacies as compared to the results of Segev scale.*

Of course there could be several possible reasons for this. For one thing, statements of the multi item scale of Segev ask about changes in pharmacies' strategic behavioural patterns in a very detailed manner, one by one, while the self-typing paragraph method compresses statements regarding the behaviour of Propsector, Analyser, Defender and Reactor SOs into a single paragraph for each respectively. *Therefore respondents find it easier to retain their overview and to distinguish with the self-typing paragraph method than in case of evaluating the statements of the Segev scale, when they had to consider deeply and provide their evaluations from statement to statement*.

The difference between the distribution of Defenders and Reactors may also have been partly caused by the phenomenon, that *the formulation of Reactors' behavioural characteristics proved to be „less desirable" for responding pharmacists* in case of self-typing paragraph method, even though during the preliminary tests we made every effort to not make this seem as the response alternative clearly representing the unsuccessful SO. The Analyser behavioural pattern is positioned in the middle of the imaginary environmental adaptation continuum, *which might have directed responding pharmacy managers from the two „extreme" idealtypical SOs (Prospectors and Defenders) towards the „center", for which reason Analysers are likely over-represented by the self-typing paragraph method*.

Placement of the two measurement tools may also have played a role in the differences between results, as it is possible, *that after answering the statements of Segev scale at the beginning of the questionnaire, respondents automatically chose a SO with a dominant behavioural characteristic that remained with a greater emphasis in their short-term memory during the self-typing paragraphs, featured later in the questionairre.* In the next chapter *we present the results received for the identification of the relevant Prospector, Analyser and Defender/Reactor SOs within HPRDS* in regard of the self-typing paragraphs and Segev scale.

32.2. The identification of relevant strategic orientations in the Hungarian public retail drug supply

By performing PCA and CFA analyses we determined that within HPRDS only 3 of the original 4 M&S's SOs can be observed. The examination of the degree of fit of factor structures to data revealed a large „interlacement" of the Defender and Reactor SOs' behavioural characteristics, *therefore it proved indispensable in order to answer our research question Q3 to evaluate it based on the distribution ratio of Prospectors, Analysers and Defender/Reactors relevant within the sector*.

To achieve this, we first rearranged the statements within the Segev scale according to the relevant 3 factor structure, based on which we re-calculated the weighted average of pharmacicts' evaluations provided for Prospector, Analyser and Defender/Reactor SOs. In case of the self-typing paragraph method we summarised the responses given to the paragraphs describing Reactor and Defender SOs in a single variable. *Table LXIII thus already shows the results of the strategy identification techniques in consideration of the fact, that disriminant validity tests revealed the presence of 3 relevant SOs within HPRDS.*

Results of the self-typing paragraph method showed close to no difference compared to the 4 SO solution, we only expanded the number of Defenders by adding those 10 pharmacies, which earlier were assigned to the Reactor behavioural pattern by their managers. *The identification results of the Segev scale however were notably altered by the rearrangement of items of the original factor structure, just as we expected.* As seen in Table LXIII we identified 55 Prospector, 63 Analyser and 89 Defender/Reactor pharmacies. As we can see, the composition and evaluation of statements loading the SOs (dimensions) changed due to the rearrangement of the factor structure, therefore not all pharmacies identified previously as Defenders or Reactors were classified to the factor „representing" the Defender/Reactor SO.

Based on experiences we can state that we registered greater or lesser differences between the results of the strategy extraction techniques used in our research. Thus, *differences between the frequency and distribution ratio of pharmacies following various M&S's SOs may largely depend on 1) the applied measurement instrument and 2) whether we accept the operationalisation approach aimed at original four SOs or the three strategic behavioural patterns that proved to be relevant within the HPRDS*. Therefore, in order to answer our research question Q3, *we examined the discrepancies experienced between the classification results in regard of the two measurement instruments in the cases of both the 3 and the 4 SO approach* when evaluating convergent validity in its classical sense.

32.3. Testing convergent validity in its classical approach

When testing convergent validity of the self-typing paragraph technique and the Segev scale (Q3) we first inspected the „internal" convergent validity of the measurement instruments. Table LXIV shows the degree of identical results received for the uncovering of strategic behavioural patterns depending on the acceptance of either the originally applied approach of 4 SOs, or the 3 confirmed by PCA and CFA analyses, *within a given measurement instrument*.

In case of the self-typing paragraph method „internal" convergence is completely fulfilled, as the difference between pharmacies classified to identical SOs in the 3 and 4 alternatives' approach are those 10 Reactor pharmacies, which we assigned to Defender/Reactors during the relevant 3 SOs approach. We experienced a sizable match between the 3 and 4 factor approach as well. Ratio of pharmacies classified to identical SOs approached 80% even despite of the fact that averages changed due to the rearrangement of scale-items, while the ratio of pharmacies categorised differently was approximately 1/5. *„Internal" convergence validity of the two measurement tools can be confirmed, as accepting either the 3 or 4 SO approach for a given measurement instrument, did not largely change the classification results for pharmacies.*

In Table LXV at the same time we examined the convergent validity *between* measurement instruments used for identifying SOs. In the classical sense convergent validity can be confirmed, if results regarding the classification of pharmacies to M&S's SOs of both the

Segev scale and the self-typing paragraphs approximate each other.

According to Table LXV *we experienced a large divergence in the results of the self-typing paragraph method and the multi-item Segev scale, applied to identify the original 4 M&S's SOs*. Ratio of pharmacies assigned to identical SOs by the two methodologies did not reach 40%. However, *according to results regarding the identification of the 3 strategic behavioural patterns observed within HPRDS, the ratio of pharmacies classified to identical SOs significantly increased,* and almost reached 2/3.

In order to answer our research question Q3 aimed at the examination of convergent validity, *we tested the significance of the difference between the classification results of the two strategy extraction techniques by means of statistical tests*. In case of the 3 and 4 factor solutions, as well as the self-typing paragraph method and the multi-item Segev scale we compared the means of the SOs operationalised as dichotomous dummy variables based on McNemar's χ^2 test. *The McNemar test, indicating a significant difference denotes that the classification results of Prospector, Analyser, Defender and Reactor pharmacies differ from each other.* Accordingly, convergent validity between the two measurement instruments are indicated by the insignificant McNemar's χ^2 tests, based on which assignment results show no differences. Tables LXVI and LXVII depict *the sameness of the classification results of SOs* operationalised as dichotomous dummy variables *in case of both methodologies and either the original 4 or the 3 SOs relevant within HPRDS.*

From results of the McNemar χ^2 tests indicated in Table LXVIII it is evident, *that in case of acceptance of the original 4 M&S's SOs approach the convergent validity of the two strategy identification techniques is not* fulfilled (Q3). According to results of the McNemar χ^2 tests classification results of the Segev scale and the self-typing paragraph method showed notable differences. Only the ratio of pharmacies assigned to the Prospector SO showed sameness in regard to the two measurement instruments (χ^2=0,522 and Sig=0,476).

At the same time we found no statistical differences between the classification results of Segev scale and self-typing paragraph method, identifying 3 SOs, in case of any of the SOs. *Based on the high concordance of pharmacies classified into the HPRDS-relevant Prospector, Analyser or Defender/Reactor SOs by both methodologies, the classical convergent validity of our measurement tools can be confirmed (Q3)*. In Chapter 32.4 we focus on answering research question Q4 and comparing the distribution ratios of M&S SOs.

32.4. Comparison of the distribution ratios of Miles and Snow's strategic orientations

With our fourth research question (Q4) we examined by comparing the distribution ratios of M&S's SOs, *to what extent pharmacies following different environmental adaptation behavioural patterns are either over- or under-represented compared to each other within HPRDS*, this special environment characterised by bureaucratic coordination mechanisms and limited competitive intensity (Q4b, Q4d). To answer this question, *we first tested the differences between classification results of the self-typing paragraph method and the Segev scale, both operationalising the 4 original SOs featured in data collection.* We determined the respective distribution ratio of Prospectors, Analysers, Defenders and Reactors by comparing the means of dichotomous dummy variables derived from SOs via paired sample t-tests.

Difference between the distribution ratio of Defenders and Reactors, Prospectors and Reactors, as well as Analysers and Reactors proved to be significant in case of both strategy

identification techniques (Table LXIX). However, this difference shows an opposite tendency for the two methodologies, as while the self-typing paragraph technique denoted a minority of inconsistent Reactors, at the same time Segev scale confirmed a relative excess of the Defender/Reactor SO. Based on the results we observed discrepancies regarding the two strategy extraction techniques in the evaluation of differences between the distribution ratio of Analysers and Prospectors, as well as Defenders and Prospectors. *While the self-typing paragraph method confirms Prospectors' relative minority in both relations, classification results of Segev scale did not show difference between these two SOs.* None of the methods showed any differences between the distribution ratio of Defenders and Analysers.

Based on the measurement instruments operationalising the 4 SOs originally featured in data collection, it can be stated about the occurence of M&S SOs that according to the self-typing paragraph technique within HPRDS the presence of Defenders is dominant, closely followed by Analysers, while emergence of Prospectors is minimal, and Reactors appear at a completely vanishing ratio. Based on the pairwise comparisons between SOs only Defenders' majority against Analysers did not prove statiscally significant. According to the classification results of Segev scale pharmacies following Reactor SO represent a significant relative majority in HPRDS, and we did not register any difference in the respective ratio of Prospectors, Analysers and Defenders, all falling behind regarding their frequency.

At the same time our research question Q4 can be answered most effectively by comparing the distribution ratios of Prospector, Analyser and Defender/Reactor behavioural patterns observed in HPRDS. To answer our secondary questions Q4b and Q4d – remaining relevant even after eliminating the original Defender SO – we examined the distribution ratios of Prospectors, Analysers and Defender/Reactors by comparing the means of SOs operationalised as dichotomous dummy variables via paired sample t-tests. Results are summarised in Table LXX.

As it can be plainly seen, measurement instruments identifying the 3 SOs confirm the dominance of Defender/Reactors, for which reason we answer „yes" to our secondary question Q4d. Prepotency of Defender/Reactors' distribution ratio as opposed to Prospectors proved to be significant based on classifications of both self-typing paragraph technique and Segev scale. Relative majority of Defender/Reactors as opposed to Analysers was as well denoted by both methodologies, yet the difference between the distribution ratios of the two SOs was only significant in case of the Segev scale. Prospectors' relative minority could be observed in case of both strategy extraction techniques, yet while the Segev scale showed no significant differences during the comparison with Analysers' distribution ratio, the self-typing paragraph method did. *Based on latter results we can reject the relation formulated in our secondary question Q4b.*

32.5. The evaluation of the distribution ratios of M&S's strategic orientations

After the fragmented presentation of our experiences regarding the comparison of the results of measurement instruments used for the identification of M&S's SOs, as well as the distribution ratio of Protector, Analyser and Defender/Reactor SOs found within HPRDS, *we summarise our answers to our research questions Q3 and Q4 within this chapter*.

To our research question Q3 we can formulate the answer that assuming the original 4 strategic behavioural patterns of M&S we found a large difference between the results of measurement instruments applied in the survey data collection. According to the self-typing

paragraph method the ratio of Prospector, Analyser, Defender and Reactor SOs showed a notable difference to the classification results of the Segev scale. Thus it can be stated, that convergent validity is not fulfilled in case of the original measurement instruments that assumed the original 4 M&S's SOs. *However we experienced no significant differences between the classification results of the two measurement instruments in case of the approach based on the 3 strategic behavioural patterns observed in HPRDS.* We experienced a remarkable concordance between pharmacies assigned to either Prospector, Analyser, or Defender/Reactor SOs according to both Segev scale and self-typing paragraph method, therefore it is safe to state that – in case of accepting the industry-relevant 3 SOs – convergent validity of the two measurement instruments was met.

As far as answers to research question Q4 are concerned, *according to the results of self-typing paragraph method and Segev scale operationalising the 3 strategic behavioural patterns observed in HPRDS the established „rankings" – concerning the distribution ratio of sector-relevant M&S SOs – do comply*. Based on this dominance of pharmacies following Defender/Reactor SOs over Prospectors proved significant in the case of both methodologies, while its vantage opposed to Analysers' distribution ratio was significant only on the Segev scale. Despite of the latter, and at the same time relying on the more reliable and valid results of the Segev scale – operationalising 3 SOs – *we answered „yes" to our secondary question Q4d*. Difference between the distribution ratio of Analysers and Prospectors in case of self-typing paragraphs can, while in case of Segev scale can not be considered significant. However, considering that both methodologies indicated the minority of Prospectors compared to Analysers, *our answer to question Q4b is „no"*. More simplified we can state that *within HPRDS*, characterised by a limited competitive intensity and a strong bureaucratic coordination *a relative majority of Defender/Reactors can be observed, followed by Analysers, while Prospectors can only be found in small numbers*. In the next chapter of the PhD thesis we turn our attention towards the interrelationship of SO and PEU (Q5, Q6, Q7).

33. Strategy and environment

One of the most important research areas of strategic management concerns the study of connections between strategic behaviour of enterprises and the external environment. International experiences *report of mixed and equivocal results* regarding the relevance of *the „managerial choice" theory* hallmarked by the name of John Child and *the contingency theory approach* (Augier-Teece, 2009). For this reason the examination of the interrelation between pharmacies' SO and the degree of PEU by pharmacy managers received special attention in our dissertation as well.

We built up our answers to research questions Q5, Q6 and Q7 of the thesis step by step in the following subchapters. Starting with more simple methodological techniques and by progressing towards more complex mathematical-statistical analyses, we were eager to reveal *whether Hungarian pharmacies' SO is determined more powerfully by the turbulently changing operating environment, or it is rather the SO chosen consciously by pharmacy managers that exerts a significant influence on the degree they perceive changes occuring in the HPRDS as unpredictable.*

It is important to note, *that we integrated exclusively Prospector, Analyser and Defender/Reactor SOs observed within HPRDS and confirmed by earlier discriminant validity tests into the examination* of the connections between M&S's strategic behavioural patterns and PEU, *which we operationalised by the Segev scale.* Also, for the interpretation of

the tables showing the results pertaining to the relationships between M&S's SOs and PEU we point toward the fact that *the PEU scale was reverse-coded, meaning that the value of 1 stood for complete unpredictability, while 5 stood for complete predictability.*

33.1. Correlation between perceived environmental uncertainty and strategic orientations

To identify initial connections between the prevalence of M&S's SOs and the degree of PEU by pharmacists we performed correlation analyses. Table LXXI shows in preparation to the answers given to research questions Q5, Q6 and Q7 the extent and direction of correlation between average evaluations provided for the HPRDS-relevant Prospector, Analyser and Defender/Reactor SOs and the evaluations given for PEU and BP.

According to the table *prevalence of Defender/Reactor and Prospector SOs showed no significant correlation with changes in the degree of PEU by pharmacists.* Contrary to this – and in compliance with the implications of M&S's strategic theory – *managers operating pharmacies pursuing Analyser SO significantly perceived the unpredictability regarding the behaviour of external environment's stakeholders and changes of conditions to be lower.* Thus the results of our correlation matrix show rather very moderate connections between the degree of pharmacy managers' PEU and pharmacies' SO, only the prevalence of Analyser SO produced a positive correlation with the decrease in degree of PEU.

33.2. The association between strategic orientations and perceived environmental uncertainty

We also grounded research questions Q5, Q6 and Q7 regarding the development of the interaction between contingency theory's „environmental determinism" and the conscious strategic choice of John Child by a *contingency table (cross-tabs) analysis*. Following the partial results of the correlation matrix we had to prove, *whether a general association between pharmacies' SOs and the degree of pharmacy managers' PEU can be determined at all within the HPRDS.* Based on methodological attributes of the contingency table analysis and performing the χ^2 tests used in the association tests, we can interpret the connections between the prevalence of Prospector, Analyser and Defender/Reactor pharmacies and the degree of PEU by pharmacy managers in two ways:

- We can shed light on, *whether pharmacies following either Prospector, Analyser or Defender/Reactor SOs perceive* changes in environmental conditions and stakeholders' behaviour *rather as predictible or uncertain* (Q5).

- We can examine, *whether we find some kind of an association within groups characterised by either low or high PEU* regarding the prevalence of M&S's SOs (Q6).

Based on the weighted averages of the evaluations given for the items of Segev scale we classified respondents to the HPRDS-relevant Prospector, Analyser and Defender/Reactor SOs, while in case of pharmacy managers' PEU we created groups of pharmacies either perceiving a low or a high unpredictability. *The contingency table (cross-tab) seen in Table LXXII shows whether we experienced a general association between SO and PEU*, which may validate further analysis of the answers given to our research questions Q5, Q6 and Q7.

The expected count of observations was never less than 5 in any of the cells, i. e. the results of

the contingency table (cross-tab) analysis are reliable. According to the results of the Pearson χ^2 test (χ^2=6,521 and Sig=0,038) *we experienced a general, significant association between pharmacies' SO and the degree of PEU by pharmacy managers in the HPRDS*. Beside the significant association we can also detect certain patterns in the connection between the prevalence of particular M&S's SOs and PEU, based on the values of Adjusted Residuals.

Unsurprisingly, emergence of *Analysers* (Q6b) is more likely in the group of pharmacies perceiving lower environmental unpredictability (-2,6 vs. 2,6), while Defender/Reactors (Q6d) are more characteristic for the group of pharmacists perceiving high environmental uncertainity (1,4 vs. -1,4). *Prospectors* meanwhile may be found (Q6a) in groups characterised by both a low or a high PEU (1,1 vs. -1,1). Based on the values of Adjusted Residual indicators pharmacy managers following Analyser SO perceive lower (Q5c), while managers of *Defender/Reactor* pharmacies perceive higher environmental uncertainity in the changes of HPRDS (Q5d). Perception of Prospector pharmacies' managers is varied, even though their majority tend to describe environmental changes by high unpredictability (Q5a).

Although based on the implications of our contingency table (cross-tab) analysis the possible answers to our research questions Q5 and Q6 start to take shape, but *in order to explicitly compare the degree of PEU between pharmacy managers following either Prospector, Analyser or Defender/Reactor SOs*, as well as to examine the prevalence of individual SOs within groups *characterised by either high or low PEU*, we had to progress to further mathematical-statistical methods.

33.3. The differences between strategic orientations regarding PEU

We formulated our research question Q5 in order to test the implications of the „managerial choice" theory hallmarked by the name of John Child within the HPRDS. To clarify the results of the contingency table (cross-tab), *we examined whether managers of pharmacies following either Prospector, Analyser or Defender/Reactor SOs perceive the changes of environmental stakeholders' behaviour and conditions to various degrees* via analysis of variance (ANOVA) as well. We examined the general difference between SOs by an F-test (Q5), while for the paired differences of Prospectors, Analysers and Defender/Reactors we performed Scheffe, Tuckey and Bonferroni tests (Q5a and Q5d).

According to ANOVA table (Table LXXIII) *we found significant difference for PEU by pharmacists following Prospector, Analyser and Defender/Reactor SOs (F=5,205 and Sig=0,006)* (Q5). It was primarily caused by the phenomenon that Analysers perceived changes of environmental conditions significantly more predictable than Prospectors and Defender/Reactors, amongst whom we did not observe any notable differences (Q5a, Q5d).

Results of the Tuckey, Scheffe and Bonferroni tests used for testing the pairwise differences between SOs showed a notable „convergence" (Table LXXIV). *In regard to PEU Analysers differ from both Prospectors and Defender/Reactors, and perceive the environment to be significantly more predictable. We did not identify significant difference between the perceptions of Prospectors and Defender/Reactors, for which reason we answered „yes" to our research question Q5a and „no" to Q5d.*

In order to satisfy the need for methodological completeness we also *examined the differences regarding PEU* between managers of pharmacies exhibiting different M&S strategic behavioural patterns *by the application of SEM* (Q5). In this context we quantified the effect

of Prospector, Analyser and Defender/Reactor SOs – oparationalised as latent constructs and confirmed during the discriminant validity tests – on pharmacy managers' PEU. *We derived the complex latent construct of PEU from the original dimensions and operationalised it as a so-called second-order factor* (Chen et al., 2005). We illustrated the measurement model in Figure XVIII, while the results can be found in Table LXXV.

Fit indices of the structural model are: CMIN/df=1,871, RMSEA=0,055, CFI=0,912 and SRMR=0,0967. With exception of the SRMR indicator the gained values comply with the cut-off criteria determined by methodological literature (Bentler-Bonett, 1980). Prevalence of Prospector and Defender/Analyser SOs does not exert a significant effect on the degree of PEU by pharmacy managers. In accordance with our previous empirical experiences *the degree of PEU by managers operating pharmacies following Prospector or Defender/Reactor SO shows no difference.* In compliance with the theory *prevalence of Analyser SO largely contributed to a decrease of pharmacy managers' PEU*, therefore PEU of Analysers is significantly lower than the ones experienced in case of Prospectors and Defender/Reactors. Results of the more valid and reliable SEM examination did not change our earlier experiences either, *thus our answers for research questions Q5a and Q5d were confirmed.*

33.4. The differences between groups characterised by high and low perceived environmental uncertainty regarding the prevalence of M&S's strategic orientations

Contrary to the methodologies aiming at exploring the effect of SOs on PEU detailed in the previous subchapter, in the following *analysis* of variance we examined the determining influence of unpredictability perceived in the changes of environmental conditions and behaviour of sectoral stakeholders on pharmacies' SO. We hoped to answer our research question Q6 via an F-test, *in which we tested the significance of differences experienced between groups characterised by either a low or a high PEU in regard to the prevalence of M&S's SOs* (Q6a, Q6c, Q6d).

According to results of Table LXXVI *we experienced no significant differences between the SOs of pharmacies led by managers perceiving the external environmental conditions of HPRDS as either uncertain or predictable* (Q6). Based on our experiences prevalence of Defender/Reactor and Prospector SOs is contingency-independent (Q6d, Q6a), although prevalence of the Analyser SO was more probable in the group perceiving a low environmental uncertainity, yet even this difference only approximated significance (Q6c). *Therefore we gave the answer of „no" to our research questions Q6, Q6a, Q6c and Q6d*.

Based on the comparison of the ANOVA and SEM examinations assisting in answering of our research questions Q5 and Q6 *it seems that the conscious strategic choice of pharmacy managers exerted a stronger influence on the degree to which they perceive the development of turbulently changing environmental conditions, than the extent to which PEU had a determining influence on the selection and following of pharmacies' SO*. The best methodological solution for answering our research question Q7 regarding the strength of the hypothesised causal relationships between M&S's SOs pursued by pharmacies and PEU however was possibly the further application of structural equation modeling (SEM).

33.5. Interactions of strategic orientation and perceived environmental uncertainty

To examine the interactions between SO and PEU we repeatedly operationalised them as second-order latent constructs. *From a theoretical point of view we were able to do so for the*

SO as well, because the Segev scale extracts the M&S's SOs primarily only along the line of the adaptive cycle's first phase, i. e. the entrepreneurial problem. This means that *it derives* the Prospector, Analyser and Defender/Reactor SOs *from an underlying latent construct, namely the „product/market domain" and its rate of change*.

By inspecting the standardised regression coefficients between the latent constructs of SO and PEU it can be revealed, whether the degree of perceiving sectoral changes as (un)predictable is determined by the conscious choice of pharmacy managers, or whether pharmacies' SO is rather determined by the degree of PEU by pharmacists. We present the SEM models examining the interactions between SO and PEU in Figures XIX and XX, *with the former one quantifying SO's effect on PEU, and the latter one the influence of PEU on SO.*

According to the results of our structural model *SO's exerted effect on PEU is β=0,174, based on which a SO consciously chosen and consistently followed by pharmacy managers had a significant influence on the perception of environmental changes and sectoral stakeholders' behaviour (sig=0,042).* The fit indices are: CMIN/df=1,967 CFI=0,889, RMSEA=0,057 and SRMR=0,0987. With the exception of the SRMR indicator the obtained values can be accepted (Chen et al., 2009).

After quantifying the effect of SO on PEU we demonstrated in our next SEM analysis the influence exerted by pharmacy managers' PEU on pharmacies' SO. *According to our results the effect of pharmacy managers' PEU on SO amounts to β=0,043. This implies that perception of environmental conditions and sectoral stakeholders' behaviour had no significant effect (sig=0,650) on the SO of pharmacies.* The model's fit indices are basically identical to those found previously: CMIN/df=1,970, CFI=0,882, RMSEA=0,058 and SRMR=0,1007. The received values – with the exception of SRMR indicator – are tolerable (Hu-Bentler, 1999). Based on our empirical experiences *the effect of SOs followed by pharmacy managers on PEU does not fall behind the effects of pharmacy managers' PEU on SO.* Even more so, a conscious choice of SO by pharmacists tends more to exert a significant effect on their perception of HPRDS' environmental conditions. *Therefore we formulated a „no" answer for our research question Q7*.

According to the experiences of the correlation and contingency tables (cross-tab), ANOVA and SEM analyses in the HPRDS the SO followed by pharmacies is not a result of pharmacists' different perception of the turbulently changing environment, but on the contrary, the SO consciously chosen and consistently implemented by them had the most influence on the way they evaluate the behaviour of environmental stakeholders and changes of conditions. *Thus in the sectoral context of our dissertation John Child's „managerial choice" theory mostly prevails over the contingency theory approach*. In the next chapter of our thesis we summarised the answers given to our research questions Q1 to Q7 in Table LXXVII.

34. Evaluation of the answers given to the formulated research questions of the dissertation

Table LXXVII: The summary of responses given to the research questions of the thesis

	RESEARCH QUESTION	ANSWER
Q1	According to the environmental adaptation behaviour of pharmacies, can we observe all the original SOs of M&S in the HPRDS?	No
Q2	In the HPRDS whether markedly distinguished, pure SOs or hybrid/mix environmental adaptation patterns can be identified?	2 pure and 1 hybrid, rather „mix”
Q3	To what extent the distribution ratios of pharmacies – following Prospector, Defender, Analyser and Reactor SOs identified in the HPRDS – differs based on the classification results of diverse strategy extraction techniques applied in our research?	4 factor: significantly 3 factor: minimally
Q4	To what extent the distribution ratios of pharmacies – pursuing different industry-specific SOs of M&S – differs from each other?	According to both method: D/R(%) ≥A(%)≥P(%)
Q4a	Is the distribution ratio of pharmacies following Defender SO exceeded by that of pharmacies pursuing Prospector SO?	Deleted
Q4b	Is the distribution ratio of pharmacies following Analyser SO exceeded by that of pharmacies pursuing Prospector SO?	Paragraphs: No Segev: No
Q4c	Is the distribution ratio of pharmacies following Defender SO exceeded by that of pharmacies pursuing Analyser SO?	Deleted
Q4d	Is the distribution ratio of pharmacies following Analyser and Prospector SOs exceeded by pharmacies pursuing Defender/Reactor SO?	Paragraphs: Prospector Yes, Analyser No Segev: Yes, both
Q5	Does the degree of PEU by pharmacy managers – following different SOs of M&S – differ from each other?	Yes
Q5a	Is the degree of PEU by pharmacists following Analyser SO exceeded by the degree of PEU by pharmacists pursuing Prospector SO?	Yes
Q5b	Is the degree of PEU by pharmacists following Defender SO exceeded by the degree of PEU by pharmacists pursuing Analyser SO?	Deleted
Q5c	Is the degree of PEU by pharmacists following Defender SO exceeded by the degree of PEU by pharmacists pursuing Prospector SO?	Deleted
Q5d	Is the degree of PEU by pharmacists following Prospector and Analyser SOs exceeded by the degree of PEU by pharmacists pursuing Defender/Reactor SO?	No (Analyser: Yes Prospector: No)
Q6	Does the prevalence of different SOs of M&S differ according to groups of pharmacies characterised by high/low levels of PEU?	No
Q6a	In the group of pharmacies characterised by high levels of PEU is the prevalence of Prospector SO greater than in the group featured by low levels of PEU?	No
Q6b	In the group of pharmacies characterised by high levels of PEU is the prevalence of Defender SO lesser than in the group featured by low Levels of PEU?	Deleted
Q6c	In the group of pharmacies characterised by high levels of PEU is the prevalence of Analyser SO lesser than in the group featured by low levels of PEU?	No
Q6d	In the group of pharmacies characterised by high levels of PEU is the prevalence of Defender/Reactor SO greater than in the group featured by low levels of PEU?	No
Q7	Is the degree of influence of SOs followed by pharmacies on PEU exceeded by the effect of PEU by pharmacists exerted on the SOs?	No

Source: Table made by the author

35. Preliminary regression analyses for the exploration of the moderating effects of PEU and GL on the relationship between strategic orientation and business performance

The main empirical research focus of our dissertation lies on the relationship between M&S's SOs and BP of pharmacies. Based on our hypotheses formulated in Chapter 23 the degree of PEU and GL of pharmacies have a potential moderating effect on the stochastic relationship between Prospector, Analyser and Defender/Reactor SOs identified during the discriminant validity analyses and their effectiveness and profitability. Prior to structural models providing the backbone of our mathematical-statistical analyses we delivered the preliminary testing of our hypotheses H1-H6 regarding the complex interrelations between the SOs and BP *by applying variables derived from the manifest scale items via so-called hierarchical interaction and multigroup moderated regression analyses.*

We approached the effect of SOs on SAL and NP of pharmacies step by step, by adding PEU and GL (moderators), as well as socio-demographic characteristics and the site attributes of any given pharmacy (control variables). We ran regressions for both dependent variables by first gradually, then collectively introducing the independent variables, i. e. integrating the specified main- and interaction effects and control variables by blocks. In regard of interpreting the results it is important to note that PEU scale was reverse-coded, meaning the value 1 stood for complete unpredictability, while 5 stood for complete predictability. We operationalised GL as a dichotomous variable (0=Urban and 1=Rural).

The selection of socio-demographic and site control variables featured in the regressions was based on experience gathered from interviews with relevant stakeholders of the HPRDS and variables conventionally referred to in strategic literature. *Into the SEM examinations detailed in later sections of our thesis we integrated only those, relevant control variables that showed significant correlation to the changes of BP* (Table XCIV). We clarify the „refining" role of PEU and GL in the relationship of SO and BP and label the types of potential moderator variables in Chapter 42, where we evaluate regression analyses and SEM results together.

35.1. The correlation between strategic orientation, business performance, geographical location and perceived environmental uncertainty

We begin the description of our results by reminding of the correlation table demonstrating the interrelations of independent and dependent variables included in the regression analyses (Table LXXI). *Knowledge of the correlation matrix showcasing the direction, strength and significance of the covariance between explanatory and criterion variables is necessary for identifying the potential moderating effects and labeling the type of the moderator variable*. When interpreting the results obtained after running the regressions, it is based on those correlation values that we will be able to decide whether the PEU by pharmacists and GL function as Pure, Quasi, Homologiser Moderators, or rather as Intervening, Antecedent, Exogenous, Suppressor, Independent factors in the relation of SO and BP. According to the guidelines of Sharma et al. (1981) this can only be judged on the basis of the significance of interaction effects, moreover by the significance of the potential moderating factor's correlation values measured with independent (SO) and dependent (BP) variables.

It is apparent that the PEU by pharmacy managers only showed significant correlation with the Analyser SO. According to this the strong prevalence of the Analyser SO changes in parallel with the reduction of the degree of PEU, which is consistent with the theoretical

implications of M&S. *PEU showed no interaction neither with SAL nor with NP of pharmacies.* However, the prevalence of Defender/Reactor and Prospector SOs showed significant interaction with the GL of pharmacies. Besides, GL also showed covariance with pharmacies' BP to some degree – in case of rural pharmacies SAL significantly, while NP was slightly surpassed by that of their urban counterparts.

After exploring the interrelations of PEU and GL with M&S's SOs and BP we performed hierarchical interaction and multigroup moderated regressions in order to clarify the effect of moderating variables and to label their types. *We began our analyses by specifying the moderating effect of PEU, then continued to examine the role of GL.*

35.2. The moderating effect of PEU in the relationship of strategic orientation and sales

Table LXXVIII illustrates the results of the hierarchical interaction regression analysis examining the potential moderating role of PEU in the stochastic relationship of SOs and pharmacies' SAL (H3). The main effects derived from the SOs show *that Prospectors had a significant positive, and the Defenders/Reactors a significant negative influence on the development of SAL, while the Analyser SO produced no substantial contribution to BP (H1a, H1d).* PEU, as an independent variable expressing the main effect – in consistency with the correlation matrix – showed no significant contribution to the SAL of pharmacies during any stage of the regression model.

By integrating PEU we examined whether beyond SOs it can contribute substantially to the explanation of changes occuring in SAL, and also whether it is capable of sheding light on a more „nuanced" interpretation between SO and market effectiveness (H3). *The interaction effects of SO and PEU did not prove to be significant during any stage of the regression model (H3a, H3b, H3d).* This lead us to the preliminary conclusion that the degree of PEU by pharmacists does not influence the effect of SOs on BP.

During the 3. stage of hierarchical regression we included socio-demographic characteristics as control variables. *We were eager to study whether the influence of SOs on SAL kept their significance even after the effect of control variables had been filtered (H9a)*, and also which variables identified in the interviews with representatives of HPRDS would be able to additionally explain SAL of pharmacies in a significant way, if any.

GL and number of employees shows a significant, while the pharmacy's total area of space shows a slight connection with the development of SAL. The main effect of SOs on SAL remained significant during the model's 3. stage too. *Prospector SO exerted a positive effect, Defender/Reactor SO a negative one on SAL, while Analyser SO had no significant influence (H1a, H1d). That is, the influence of main effects remained robust even after the effects of socio-demographic characteristics included as control variables were filtered (H9a).* The same can be ascertained about the insignificance of interaction effects of SOs and PEU.

During the 4. stage of regression analysis we integrated pharmacies' site characteristics. *To our surprise none of the site attributes proved to be significant in regards to SAL.* Prospector, Analyser and Defender/Reactor SOs' main effects remained unchanged, and so did the insignificant interaction effects of SOs and PEU (H9a).

Results found in the rightmost column (Sig. R^2 Change) of Table LXXIX, demonstrating the explanatory power of models introduced during various stages of hierarchical moderation,

verify that the main effects of Prospector, Analyser and Defender/Reactor SOs are able to explain significantly, at 16,5% the proportion of variance encountered in SAL of pharmacies *(R^2=0,165). During the 2. stage of regression analysis the interaction effects of PEU and the SOs did not contribute substantially to the changes in SAL compared to the main effects (Sig. R^2 Change=0,511).* The model's explanatory power increased from the 1st stage's 16,5% to merely 17,6% (R^2=0,176).

Socio-demographic characteristics integrated during the 3. stage of hierarchical interaction moderation however increased the regression model's explanatory power in a significant way (Sig. R^2 Change=0,000). By introducing these control variables the model's explanatory power regarding the development of pharmacies' SAL improved vastly (R^2=0,467). *During the 4. stage of regression analysis, adding site attributes of pharmacies did not contribute significantly to changes in market effectiveness (Sig. R^2 Change=0,669).* The model containing main and interaction effects, as well as socio-demographic and site characteristics *were able to explain 48% of the variance in pharmacies' SAL.* Based on the results gained from regression models regarding SAL, *the nature of strategic and environmental main and interaction effects did not change substantially* even after filtering the effects of socio-demographic and site characteristics.

In order to provide a more grounded basis for the insignificant moderating effect of PEU – as uncovered in the relationship between SO and SAL – we applied further preliminary mathematical-statistical methods (H3). We ran our regression model directed at examining the connection between SO and SAL within *the groups of pharmacies characterised by low and high PEU.* Performing multigroup regression analysis we examined to what degree the experiences of hierarchical interaction moderations can be confirmed.

As Table LXXX shows, the prevalence of *Prospector* SO – confirming the experiences gathered from the hierarchical interaction regression – generated a significantly *positive effect on the development of SAL within context of low and high PEU equally* (H1a, H3a). Following an *Analyser SO* – again, reinforcing our previous experiences – also *exerted an insignificant influence on changes in SAL, regardless of the degree of PEU (H3b).* The sole difference was encountered in case of *Defender/Reactors*, according to which following a similar SO *only eroded the SAL of pharmacies significantly amongst pharmacy managers that could be described by low levels of PEU* (H3d).

According to Table LXXXI, illustrating the explanatory power of multigroup regression, *both of our models contributed in a significant way to predicting SAL.* Based on it M&S's SOs managed to explain 24,4% of proportion of variance found within SAL of pharmacies in a context characterised by high PEU and 19,3% of low PEU environments. *The results of our multigroup moderated regression analysis seemingly also confirms that PEU in fact does not moderate the relationship of SO and SAL in a substantial manner (H3).* After examining the effect of pharmacy managers' PEU on the interrelation between SO and SAL, we turned our attention towards uncovering the role of PEU regarding the relationship between SO and NP.

35.3. The moderating effect of PEU on the relationship between SO and net profit

After expounding the connection between M&S's SOs and SAL, *we moved on to examine the potential moderating effect of PEU on the relationship between Prospector, Analyser and Defender/Reactor SOs and the NP of pharmacies (H4).* Experiences gathered from our hierarchical interaction regression analysis regarding profitability can be found in Table

LXXXII.

Upon taking a closer look at the main effects of SOs, then – based on the 1. stage of regression analysis – it is safe to announce that *neither the prevalence of Prospector, nor that of Defender/Reactor, nor even Analyser SO did provide any significant effect on the development of pharmacies' NP (H2c, H2d).* The main effect of PEU did not show a significant relationship to the changes of NP during any stage of the regression model.

Applying the 2. model we examined whether the degree of PEU by pharmacy managers is able to contribute to the explanation of NP beyond SOs, and also whether it could illuminate changes in the relationship between SOs and profitability in a more „chiselled" way. The interaction effects of SOs and PEU on profitability turned out to be non-significant in case of Prospectors, Analysers or Defenders/Reactors, too (H4a, H4b, H4d). *The same can be observed in the model's 3. and 4. stages: PEU's formerly hypothesised moderating effect regarding the relationship of SO and NP showed far from significant.*

Seeing as how neither main effects of SOs, nor interaction effects of PEU and SOs exerted any significant influence on NP, *we had to redefine the role of socio-demographic and site characteristics integrated in stages 3 and 4.* We could not handle it as a priority anymore to examine whether main and interaction effects remained the same after filtering the effect of those control variables, as they were not significant to start with (H9b). Thus upon including control variables we only tried to identify additional factors potentially explaining NP.

As for socio-demographic variables, the total area of space of pharmacies showed a strong, while the number of employees produced a slightly positive interrelation with the development of NP. *Contrary to our expectations based upon interviews with sectoral stakeholders, GL of pharmacies did not exert any substantial influence on changes in profitability,* i. e. we could not register any significant differences between NP of urban and rural pharmacies. Regarding site characteristics only the proximity of the pharmacy to malls, shops and other retail spots managed to approach any significance.

Based on the results found in the rightmost column (Sig. R^2 Change) of Table LXXXIII, quantifying the explanatory power of the regression model, *not even the main effects of the SOs are fit to contribute to NP of pharmacies in a significant way (Sig. R^2 Change=0,151) (H2).* Prevalence of Prospector, Analyser and Defender/Reactor SOs could only explain 3,7% of the proportion of variance observed in NP of pharmacies (R^2=0,037).

Interaction effects of PEU and SOs did not provide any additional explanatory power beyond the main effects. Their contribution to the changes of NP are minimal (Sig. R^2 Change=0,619). Upon introducing interaction effects, the explanatory power of 2. stage's regression model „jumped" from the 1. stage's estimation of 3,7% to 4,7% (R^2=0,047). The socio-demographic variables integrated during the 3. stage of hierarchical moderation significantly increased the explanatory power of the regression model (Sig. R^2 Change =0,002). The inclusion of control variables largely contributed to the NP of pharmacies, thus the estimations of the model, cumulated with strategic main effects and the interaction effects with PEU are able to explain 16,9% of the variance in profitability of pharmacies (R^2=0,169).

Integrating site characteristics did not contribute significantly to changes of NP (Sig. R^2 Change=0,249). The sole variable – labelled as *„proximity of retail units (e.g. shopping malls, hypermarkets, shops etc.)"* – showing some significant connection „boosted" the model with

another 4% of explanatory power. *The regression model integrating main and interaction effects, as well as control variables expressing socio-demographic and site characteristics managed to explain the variance in NP (R^2=0,208) at a percentage of 20,8%.*

To confirm the insignificant moderating effects of PEU discovered in the relationship between SO and NP we ran our regression repeatedly for the groups of pharmacies characterised by low and high PEU. Based on Table LXXXIV, which summarises the experiences of multigroup regression, the influence of Prospector, Analyser and Defender/Reactor SOs on profitability can be explicitly compared.

We can ascertain that *regardless of the degree of PEU by pharmacist' the effect of Prospector, Analyser and Defender/Reactor SOs was still insignificant (H2c, H2d), meaning that PEU played no moderating role (H4)*. However, similar to the experiences from multigroup regression ran for SAL, the effect of the Defender/Reactor SO on profitability showed near significant differences between contexts characterised by low and high degrees of PEU.

According to Table LXXXV the explanatory power of regression model applied for the extimation of SOs' effect on profitability proved to be significant within the group of pharmacy managers perceiving high degrees of environmental uncertainty, where it explained 12% of the variance in NP. Yet in a context characterised by low PEU the prevalence of M&S's SOs could only explain a vanishing 1% of the proportion of variance in pharmacies' NP, still the slightly substantial difference between the two contexts did not prove sufficient to change the effect of respective SOs of M&S on NP. *Based on our preminilary regression results we can state that PEU seemingly does not moderate the relationship between SO and NP (H4)*. After examining the moderating effect of PEU by pharmacists we turned our attention to reveal the potential moderating role of GL in the relationship between SO and BP.

35.4. The moderating effect of GL on the relationship between SO and sales

To ground the SEM analyses that provided the methodological pillar of our dissertation we also performed hierarchical interaction and multigroup moderated regressions for the identification of GL's potential moderating function (H5 & H6). Tables LXXXVI and LXXXVII quantify the influence of GL on the relationship between SOs and SAL based on the experiences of interaction moderation (H5).

Referring to the SOs' main effects depicted in Table LXXXVI it can be discerned that the prevalence of Prospector SO has exerted a significant positive, and that of Defender/Reactor SO a significant negative influence on the development of sales, while Analyser SO did not show a relevant contribution to SAL (H1a, H1d). *The main effect of GL also exerted a significant influence on market effectiveness, as rural pharmacies' SAL tended to fall below the turnover of their urban counterparts.* According to Table LXXXVII the model containing the main effects contributed significantly to the explanation of SAL (Sig. R^2 change=0,000), and the model set up in the 1. stage of hierarchical regression analysis explained the proportion of variance of SAL to an extent of 23,5% (R^2=0,235).

Contrary to our expectations the interaction effects of SOs and GL turned out to be insignificant (H5a, H5c, H5d). *According to our results GL did not exert a moderating effect on the stochastic relationship between SO and pharmacies' SAL during any stage of hierarchical moderated regression analysis* (Table LXXXVI) (H5). The model integrating the interaction effects derived from the product of Defender/Reactor, Prospector, as well as

Analyser SOs and GL did not contribute substantially to the development of pharmacies' SAL (Sig. R^2 change=0,728), and was able to explain 24,1% of proportion of variance in SAL (R^2=0,241), which, compared to main effects, is a diminutive increase (Table LXXXVII).

The socio-demographic variables integrated in the 3. stage of regression produced a notable effect on the development of SAL. The model including main and interaction effects, as well as control variables explained 46,3% of pharmacies' SAL (R^2=0,463), which means a significant increase (Sig. R^2 change=0,000) (Table LXXXVII). Number of employees showed strong correlation with SAL, while total area of space proved to be close to positively significant. *It is important to note that main effects of Defender/Reactor and Prospector SOs remained significant even after integrating control variables*, i. e. their effect on SAL was not „repressed" by the effect of socio-demographic variables (Table LXXXVI) (H9a).

The explanatory power of the model introduced during the 4. stage of hierarchical regression did not improve significantly (Sig. R^2 change=0,708), *as site characteristics of pharmacies did not exert a relevant, additional influence on the development of SAL*. The main effect of Prospector SO however turned out to be insignificant (H9a), which was possibly caused by the fact that close vicinity of healthcare institutions and retail units exerted an insignificant, yet relatively strong effect on market effectiveness (Table LXXXVI). According to Table LXXXVII the regression model including main and interaction effects of SOs and GL, as well as the socio-demographic and site characteristics was able to explain 47,6% of proportion of variance (R^2=0,476) in SAL.

Based on the results stemming from hierarchical interaction regression analysis GL of pharmacies did not moderate the relationship between SO and SAL. This result is quite surprising, as one would logically assume from a theoretical and industry-specific perspective as well, that the effect of a given SO's prevalence on SAL would differ for urban pharmacies characterised by favorable demand conditions as compared to rural ones characterised by less favorable factors for operation. *Thus we ran the regression model established for the relationship of SO and SAL within the subsamples of urban and rural pharmacies as well, the results of which can be discerned from* Tables LXXXVIII and LXXXIX.

From the results of multigroup regression it appears to be evident that – contrary to the experiences obtained from the earlier hierarchical interaction regression analysis – GL produces a significantly moderating effect on the relationship between SO and SAL (H5). As seen in Table LXXXXVIII, the negative effect of Defender/Reactor SO on market effectiveness is not significant in case of urban environment, yet managed to strongly erode the SAL of pharmacies on rural sites (H5d). Prevelance of Analyser SO did not cause any notable decrease in SAL on urban sites, while it strongly deflated the turnover of rural pharmacies following similar SOs (H5c). Prospector SO produced a significant positive influence on SAL at both urban and rural sites, but it is worth to mention that beneficiary effects of its prevelance appeared to be stronger in rural context (H5a).

Results shown in Table LXXXIX confirm that the prevelance of M&S's SOs in both urban and rural environments contributed significantly to the explanation of pharmacies' SAL. The model explained the proportion of variance found for urban pharmacies' SAL to an extent of 13,1%, and 34% of rural ones. *To summarise, interaction and multigroup moderations produced different results in respect of GL's moderating effect. Based on the former, GL did not moderate the development of the relationship between SO and SAL, while according to the latter it did.* We will pay stressed attention to the confirmation of these mixed results during

the following SEM analyses.

35.5. The potential moderating effect of geographical location on the relationship between strategic orientation and net profit

After examining *SAL we explored the potential moderating effect of pharmacies' GL on the relationship between M&S's SOs and NP.* We performed *the preliminary testing of H6 again via hierarchical interaction and multigroup moderated regressions.* Tables XC and XCI show the results of the hierarchical interaction moderation.

As seen in Table XC, neither Prospector, Defender/Reactor, nor Analyser SOs' prevelance exerted a significant effect on NP (H2c, H2d). *GL's main effect on profitability of pharmacies also only approximated significance. According to this, rural pharmacies' NP fell slightly, yet not significantly behind profitability of urban ones.* Table XCI shows that the model including main effects did not contribute in a significant way to the estimation of pharmacies' profitability (Sig. R^2 change=0,09), as it only explained the proportion of variance of pharmacies' NP to an extent of 4,4 (R^2=0,044).

Interaction effects of M&S's SOs and GL were insignificant in all stages of hierarchical regression (H6a, H6c, H6d). According to our results GL did not exert a moderating effect on the relationship of Prospector, Analyser, Defender/Reactor SOs and pharmacies' NP (Table XC) (H6). The model enhanced with interaction effects of SOs and GL did not contribute to the development of profitability in a significant way (Sig. R^2 change=0,633), and was able to explain only 5,4% of the proportion of variance in NP of pharmacies (R^2=0,054) (Table XCI).

The socio-demographic variables integrated during the 3. stage of regression analysis had a notable effect on profitability of pharmacies. As depicted in Table XC, the model including main and interaction effects, as well as control variables succeeded in explaining 15,1% of the variance in pharmacies' NP (R^2=0,151), which means a significant increase (Sig. R^2 change=0,002). Number of employees and total area of space showed a significant positive correlation with changes in NP. While main and interaction effects remained insignificant (H9b), it is important to emphasise that *after introducing control variables the effect of socio-demographic factors suppressed the influence of GL on profitability (Table XCI).*

The explanatory power of the model established in the 4. stage of hierarchical regression did not improve after integrating control variables regarding site attributes (Sig. R^2 change=0,339), *and as seen in Tables XC and XCI these variables did not have a substantial influence on the development of pharmacies' profitability*. By including site characteristics, beyond main and interaction effects the influence of the number of employees also proved to be insignificant (H9b). The regression model containing the main and interaction effects of SOs and GL, as well as socio-demographic and site attributes explain 18,6% of NP's proportion of variance (R^2=0,186).

Hierarchical interaction regression showed that pharmacies' GL did not moderate the relationship between SO and NP. Based on our former industry-related experiences this is not very surprising, as contrary to the changes in SAL, organising the costs of operations of a pharmacy is less dependent on GL, than it is upon the pharmacists' management competences. This seems to be backed by the fact that according to industry reports several needs of developments and stock financing of urban pharmacies were funded by irresponsible loans during the period of 2006 to 2011 (Bodrogi et al., 2010). *We performed yet another*

multigroup regression to explicitly compare the effect of SO on profitability of urban and rural pharmacies. Tables XCII and XCIII summarise our gathered experiences.

Multigroup regression shows that GL of pharmacies still moderates the relationship between SO and NP. No prevelance of any M&S's SO contributed to the development of pharmacies' profitability in urban environments. Contrary to this Defender/Reactor SO significantly worsened (H6d), while Prospector SO significantly improved the NP for rural pharmacies (H6a). In rural context the negative effect of Analyser SO on profitability approximated, yet in fact did not reach the level of significance.

As seen in Table XCIII, the regression model established for estimating changes within urban pharmacies' profitability did not contribute notably to the development of NP (Sig. R^2 change=0,911), the main effects of SOs managed to explain only 0,5% of profitability (R^2=0,005). *In the case of rural pharmacies however main effects of SOs contributed substantially to the changes in profitability* (Sig. R^2 change=0,003), the significant regression model succeeded in explaining 15,5% of the proportion of variance experienced in NP of pharmacies (R^2=0,155).

Summarising the results it is fair to state that interaction and multigroup moderations had different implications on the potential moderating effect of GL yet again. According to the former GL does not, while according to the latter it indeed does moderate the relationship between SO and profitability. Confirming or refuting our mixed results falls to the SEM analyses of Chapter 38, in which M&S's SOs are operationalised as latent constructs.

35.6. Control variables: Methodological implications of regressions for SEM models

Based on experiences from regressions regarding SAL and NP, *the nature of main and interaction influences did not change radically by filtering the socio-demographic and site characteristics of pharmacies*. Despite of this fact during the SEM analyses detailed in the following chapters of the thesis we still quantified the effect of only those control variables that showed significant correlation with pharmacies' SAL and NP (Figures XXXIII-XXXIV). In order to preserve methodological purity *we also did not include control variables related insignificantly to BP in cases whenever representatives of HPRDS showed a pronounced interest in them*. Table XCIV illustrates the correlations between control variables and BP indicators prominent in our PhD research.

The same table shows that SAL of pharmacies were influenced by most control variables, except for the following three: *close vicinity of shopping centers, location within shopping malls, and equity-based cooperation*. However, a multitude of variables did not show any significant correlation with NP. These were: *drugstores, close vicinity of gas stations and competitor pharmacies, location within shopping malls, ownership structure, membership in equity- and relationship-based cooperations.*

According to guidelines of methodological literature in case of clear and interpretable structural models researchers must aspire to reasonably reduce the number of control variables (Hair et al., 2012). For this reason *we narrowed the circle of control variables significantly correlating with BP before integrating them into our SEM models*. Based on the unanimous opinion of the interviewed industrial experts, the number of employees is a consequence, rather than a determining factor of pharmacies' BP, thus it was not included as a control variable. The distinction *between pharmacies' total area of space and that of the*

officina was deemed as redundant by the interviewed pharmacists after data collection, therefore the *total area of space* variable – showing a higher a correlation with BP – was included into the SEM models.

36. The relationship between strategic orientations and business performance

After running the regression analyses we tried to confirm our preliminary results for the development of the stochastic relationship between M&S's SOs and pharmacies' BP via SEM examinations, in which we operationalised SOs as latent constructs. *We started our analysis with exploring the relationship between the prevalence of Propspector, Analyser and Defender/Reactor SOs as well as SAL and NP of pharmacies, i. e. testing our hypotheses H1 and H2*. We present our structural models regarding the relationship of SO and BP, as well as the potential moderating effect of the degree of PEU by pharmacy managers and pharmacies' GL in Figures XXI to XXXIV, which accompany Chapters 36 to 40, while our experiences are gathered in tabular form. Interpretation of results, as well as comparisons of experiences stemming from regression and SEM analyses can be found at the end of each chapter.

36.1. The relationship between strategic orientations and sales of pharmacies

After running the structural model outlined in Figure XXI, Table XCV shows *the effects exerted by Prospector, Analyser, and Defender/Reactor SOs forming latent constructs on the development of SAL* of Hungarian public pharmacies (H1).

It can be stated that Prospector SO had a significant positive, while Defender/Reactor SO a significant negative effect on changes in SAL. Prevalence of Analyser SO showed no significant connection with the development of SAL. The results of testing our hypothesis H1 confirm those of our earlier regression analyses, i. e. *there is a difference between SAL of pharmacies following either Prospector, Analyser or Defender/Reactor SOs (H1), with that of Prospectors being the highest (H1a), Defender/Reactor's being the lowest (H1d), and Analyser's pending in the wide range between the two.*

The results of SEM also illuminated that 22% of proportion of variance experienced in SAL of pharmacies can be explained by the prevalence of M&S's SOs (R^2=0,22). Based on the results of earlier research in strategic management this rate is perfectly acceptable (Cool-Schendel, 1988, Ketchen et al., 1997, Shook et al., 2004). The fit indices of the structural model exhibiting the development of the relationship between Prospector, Analyser, Defender/Reactor SOs and SAL are the following: CMIN/df=544/357=1,524, CFI=0,936, RMSEA=0,05 and SRMR=0,0906. With the exception of the SRMR indicator these values comply with the criteria of methodological literature (Hu-Bentler, 1999).

The *difference in SAL of pharmacies following different M&S's SOs are also confirmed* by the results of Table XCVI (ANOVA) and of the *post-hoc Scheffe, Tukey and Bonferroni* tests, which perform a pairwise comparison of SAL exhibited by each SO (Table XCVII). Thus it was verified that within HPRDS the highest SAL are realised by Prospectors, followed by Analysers, while Defender/Reactors produce the lowest turnover. With the exception of of the Bonferroni test's results regarding the difference between Defender/Reactors and Analysers, pairwise comparisions also showed significant discrepancies between the SAL of SOs. *Concludingly, we were able to accept our hypotheses H1, H1a and H1d.*

36.2. The realationship between strategic orientations and net profit

After expounding the effect of SOs on SAL we also examined the effect exerted by Prospector, Analyser and Defender/Reactor SOs on pharmacies' NP to test our hypothesis H2 (Figure XXII). *According to the estimated parameters depicted in* Table XCVIII *neither the Prospector, nor the Analyser, nor the Defender/Reactor SO showed a significant influence on pharmacies' NP (H2).* Prospector SO's prevalence contributed most to NP (H2a), while that of Defender/Reactor SO the least (H2d). Prevalence of the Analyser SO showed no connection with the profitability of pharmacies (H2c). All in all, M&S's SOs explained only 3% of NP's variance (R^2=0,03).

Fit indices of the SEM exhibiting the development of the relationship between Prospector, Analyser, Defender/Reactor SOs and NP are the following: CMIN/df=586/359=1,633, CFI=0,922, RMSEA=0,055 and SRMR=0,093. Based on this it can be stated that with exception of SRMR indicator the values comply with the threshold criteria of mathematical-statistical literature (Baumgartner-Homburg, 1996). *The convergence of NP of pharmacies following varying M&S's SOs is confirmed by both the ANOVA table and the results of the post-hoc Scheffe, Tukey and Bonferroni tests*, which perform a pairwise comparision of Prospector, Analyser and Defender/Reactor SOs' profitability (Tables XCIX and C).

Although based on these results it can be stated that within HPRDS the highest NP is realised by Prospectors, followed by Analysers, while Defender/Reactors produce the lowest profitability, *the differences however did not prove significant*. The Tukey, Scheffe and Bonferroni tests did not show significant discrepancies in any relation, *so we rejected our hypotheses H2, H2a and H2d*.

37. The potential moderating effect of perceived environmental uncertainty on the relationship between strategic orientations and business performance

In our hypotheses H3 and H4 we focused on the potential moderating effect of PEU by pharmacists on the relationship between M&S's SOs and BP of pharmacies. Based on our presumption pharmacists' subjective perception regarding the degree of uncertainity of changes occuring in an environment characterised by limited competitive intensity and bureaucratic coordination mechanisms would notably influence the nature of the relationship of SO as well as SAL and NP. *We tested our hypotheses via SEM, more precisely by applying the two different methodological approaches of multigroup and interaction moderations.*

37.1. The moderating effect of PEU on the relationship of strategic orientation and sales

To test our hypothesis H3 we first examined the potential moderating effect of the degree of PEU by pharmacy managers on the relationship between M&S's SOs and SAL of pharmacies via *multigroup moderation* (Figure XXIII). The results are showcased in Table CI.

As seen, the the degree of PEU by pharmacists had a minimal moderating effect on the relationship between M&S's SOs and SAL. Prospector SO exerted a positive significant effect on turnover of pharmacies regardless of the degree of PEU (H3a). Analyser SO did not influence the development of SAL in case of pharmacies ran by managers perceiving either low or high environmental uncertainity, although its negative effect on turnover is not negligible in case of high PEU (H3b). Although the *Defender/Reactor SO* did not decrease the

SAL notably in a context characterised by high PEU, *its prevalence did however exert a significant negative effect on pharmacies' SAL in case of lower degrees of PEU (H3d).*

The difference ($\Delta\chi^2$=24,7 és Δdf=29) between the original *„Unconstrained"* (χ^2=1696,7 and df=800) model, allowing free movement of parameters and the *„Constrained"* (χ^2=1721 and df=829) model, assuming the equality of the standardised regression coefficients *did not prove to be significant* (H3), as the critical value (0,95 and 29)=42,6 is greater than the empirical one (24,7). According to the results of *„path by path" analyses* we witnessed a discrepancy only in case of the standardised regression coefficients between the Defender/Reactor SO and SAL, while the nature of the relationship between Prospectors or Analysers and SAL did not change.

The fit indices of the structural model demonstrating the development of the relationship between SOs and SAL in respect of PEU are: CMIN/df=1086/692=1,57, CFI=0,874, RMSEA=0,053 and SRMR=0,1034. The value of the χ^2 test measuring general fit, as well as the value of the RMSEA indicator quantifying differences between the estimated and empirical models based on examination of standardised residuals comply with the methodological threshold criteria (Shook et al., 2004). The value of CFI indicator, although with reservation, can be tolerated, while SRMR indicator falls short of the recommended threshold value of 0,08 (Byrne, 2001). *According to our results 26% (R^2=0,26) of variance of SAL found for pharmacies with a high PEU can be explained by the prevalence of M&S's SOs, while in case of pharmacies characterised by lowPEU it is 21% (R^2=0,21).*

To further test our hypothesis H3 pertaining to the potential moderating effect of PEU on the relationship between SOs and SAL of pharmacies we applied *interaction moderation* in our next examination (Figure XXIV).

Based on the examination of main and interaction effects presented in Table CII, prevalence of Prospector SO exerted a significant positive effect on pharmacies' SAL, which was not even influenced notably by the degree of PEU by pharmacy managers (H3a). Defender/Reactor SO, having a substantial negative effect on SAL significantly eroded pharmacies' turnover, even in cases when the degree of PEU by pharmacy managers decreased (H3d). Analyser SO had no influence on SAL either by itself or in interaction with PEU (H3b). We found that PEU also showed no direct connection to changes in pharmacies' SAL. According to our SEM results *main and interaction effects of PEU and SOs managed to explain 25% (R^2=0,25) of the variance experienced in pharmacies' SAL, which is a slight increase compared to the 22% explained by the three SOs as discussed earlier in Chapter 36.*

37.2. Evaluating the role of PEU in the relationship of strategic orientation and sales

The regression and SEM analyses showed that PEU had no significant influence on the development of the relationship between Prospector or Analyser SOs and SAL of pharmacies, hence we rejected our hypotheses H3a and H3b. *In contrary to regression analyses the reduction in the degree of pharmacy manager's PEU significantly lessened the SAL of Defender/Reactor pharmacies according to both multigroup and intaraction moderation SEM examinations (H3d)*. This means a moderation counteractive to that formulated in our presumption, *which led us to also reject our hypothesis H3d*, as it was the decrease (and not the increase) of PEU that contributed to the lessening of Defender/Reactor pharmacies' SAL.

37.3. The moderating effect of PEU on the relationship between SO and NP

In our hypothesis H4 we forecasted that the degree of PEU by of pharmacy managers would influence the relationship between SO and NP. To test H4 we first examined the moderating effect of PEU via *multigroup moderation* (Figure XXV.).

As seen in Table CIII the degree of PEU by pharmacists did not influence the development of the relationship between SOs and NP (H4). Although it can be vaguely discerned that in case of a high PEU context Prospector SO had a positive (H4a), while Defender/Reactor (H4d) and Analyser (H4c) SOs had a negative influence on NP, those relations are not significant. In case of low PEU the positive effect of Prospector SO disappears, while the negative effect of Defender/Reactor and the Analyser SOs decreases.

The difference of the „*Unconstrained*" (χ^2=1720 and df=800) and the „*Constrained*" (χ^2=1746,2 and df=829) *models is not significant* (H4), as the critical value (0,95 and 29) =42,6 is greater than the empirical one (26,2). *According to „path by path" analyses we found a difference only for the standardised regression coefficients of Defender/Reactor SO and NP*. The fit indices are: CMIN/df=1175/720=1,632, CFI=0,854, RMSEA=0,056 and SRMR=0,1066. The results of the χ^2 test and the RMSEA indicator comply with the threshold criteria of mathematical-statistical literature (Hu-Bentler, 1999). The value of CFI can be tolerated with reservation, but SRMR falls short of the recommended value of 0,08. According to our results 14% (R^2=0,14) of the variance experienced in the profitability of pharmacies characterised by high PEU can be explained with the prevalence of M&S's SOs, while in case of a low PEU context this amounts only to 1% (R^2=0,01), *yet still these vast discrepancies are not sufficient to mark the difference of the two models to be significant*.

To further test H4 we examined the moderating effect of PEU also via *interaction moderation* besides multigroup moderation (Figure XXVI). Results of Table CIV *confirm that in regard of the relationship between SO and NP we indeed found no difference between groups characterised by either high or low PEU*. It is evident that the relationship between SOs and profitability of pharmacies was not significantly influenced by the degree of PEU by pharmacists (H4). *Neither main (SOs), nor interaction effects (PEU*SOs) exerted a significant effect on NP of Prospectors, Analysers and Defender/Reactors (H4a, H4c, H4d)*. According to our structural model main and interaction effects of PEU and SOs explained 3% (R^2=0,03) of the variance in pharmacies' profitability.

37.4. Evaluating the moderating effect of PEU in the relationship of SO and net profit

PEU did not exert an influence on the development of the relationship between Prospector SO and NP of pharmacies (H4a). *For this reason we rejected our hypothesis H4a.* According to both regressions and multigroup and interaction moderations (SEM) the development of the degree of PEU by pharmacists did not have a significant influence on the relationship of Analyser SO and pharmacies' profitability (H4b). *Therefore we did not accept our hypothesis H4b, either.* Interaction between Defender/Reactor SO and PEU proved also to be insignificant (H4d). The negative effect of its prevalence on NP approached significance only for pharmacists characterised by high PEU in case of running multigroup moderation. *Thus we also rejected our hypothesis H4d.*

38. The potential moderating effect of geographical location on the relationship between strategic orientation and business performance of pharmacies

While inspecting the influence of SOs on the BP of pharmacies, we also greatly emphasised the potential moderating effect of GL. In our hypotheses H5 and H6 we presumed the nature of the relationship between SO as well as market effictiveness and financial profitability changes between the groups of pharmacies operating in urban and rural contexts. *We tested our hypotheses by performing both multigroup and intaraction moderations (SEM)*. We began our examination by uncovering the effects influencing the development of sales (H5).

38.1. The moderating effect of GL on the relationship between SO and sales

To explore the potential moderating effect of GL on the relationship between SO and SAL we first performed an *interaction moderation* (Figure XXVII). Results can be discerned from Table CV.

As seen, GL played no moderating role in the relationship between SO and sales (H5). The interaction effects derived from the product terms of Prospector, Analyser and Defender/Reactor SOs and GL exerted an insignificant influence on the development of SAL in all three cases (H5a, H5c, H5d). At the same time the main effects of Prospector and Defender/Reactor SOs and GL remained significant, the prevalence of Prospector SO strongly enhanced, while that of Defender/Reactor eroded SAL. Rural pharmacies' turnover is significantly lower than that of their urban counterparts. It has to be noted that the influence exerted on SAL by Prospector SO surpassed that of GL. The SEM quantifying main and interaction effects of SOs and GL explained 30,2% (R^2=0,302) of the variance in SAL. *Interaction moderation managed to confirm the experiences gathered from our earlier regression, namely that the moderating influences exerted by GL on pharmacies' SAL are insignifiant, if operationalised by interaction effects.*

However, we examined the potential moderating effect of GL on the relationship between M&S's SOs and SAL of pharmacies also by applying multigroup moderation (SEM). Our choice was founded by the fact *that multigroup regression analyses performed on groups of both urban and rural pharmacies showed a significant difference in the influence exerted on SAL by paricular SOs*. We were eager to investigate, whether insignificant interaction effects discovered during the former interaction moderation change if we compare the SO's effect on turnover explicitly between the groups of urban and rural pharmacies (Figure XXVIII).

As seen in Table CVI, *contrary to the results of interaction moderation, the effect of SOs on SAL showed a significant difference between urban and rural pharmacies (H5)*. Within an urban environment only Prospector SO contributed significantly to the increase in SAL, although its effect can not be viewed as stronger than that experienced in rural environments (H5a). Effects of Defender/Reactor and Analyser SOs within cities did not prove to be significant, the negative influence of Analyser and Defender/Reactor SOs in the countryside however increases significantly (H5c, H5d).

The difference ($\Delta\chi^2$=43,2 and Δdf=29) *between the „Unconstrained"* (χ^2=1600,1 and df=800) and *„Constrained"* (χ^2=1643,3 and df=829) *structural models is significant* (H5), as critical value (0,95 and 29) =42,6 is lower than the empirical 43,2. According to the „path by path" analyses this was predominantly caused by the discrepancies between standardised regression coefficients of Defenders/Reactors and Analysers, observed in urban and rural environments. Fit indices of our model demonstrating the relationship between SOs and SAL in regards to GL are: CMIN/df=1104/728=1,517, CFI=0,864, RMSEA=0,051 and SRMR=0,0971.

The value of the χ^2 test measuring general fit and the RMSEA indicator, measuring the differences between data estimated by the model and the results observed via examining the standardised residuals comply with threshold criteria established by methodological literature (Bentler-Bonett, 1980). The value of the CFI indicator can be accepted with reservations, yet the SRMR indicator still falls short of the recommended threshold value of 0,08. *Our structural model managed to explain only 14% (R^2=0,14) of proportion of variance found for SAL of urban pharmacies by the prevalence of M&S's SOs, but within rural context this amounted to as much as 31% (R^2=0,31).*

38.2. The evaluation of the moderating effect of geographical location on the relationship between strategic orientation and sales

As it can be discerned from *interaction* regression and structural moderation (SEM), GL *did not influence the relationship between the prevalence of Prospector, Analyser and Defender/Reactor SOs and SAL (H5).* According to results of *multigroup* regression and SEM moderation *the relationship between M&S's SOs and SAL however largely depends on either urban or rural location of pharmacies (H5)*. Based on multigroup experiences the prevalence of Prospector SO had significant positive influence on turnover in both cities and the countryside, although its effect turned out to be stronger in rural context than in case of urban pharmacies (H5a). *Thus we rejected our hypothesis H5a*, as we registered the increase of Prospector SO's effect on SAL not in the cities, but in the countryside.

Multigroup techniques brought to attention that the relationship between Analyser SO and pharmacies' SAL changes in respect to GL (H5). As opposed to our assumptions Analyser SO's negative effect on SAL did increase and gained significance not in the cities, but in the countryside. *Based on this we did not accept our hypothesis H5c, either*. According to multigroup results the negative relationship of Defender/Reactor SO and turnover varies depending on pharmacies' GL (H5d). Contrary to our expectations the negative relationship between Defender/Reactor SO and SAL increased significantly in the countryside, while it did not manage to significantly lessen turnover in cities characterised by favorable demand conditions. *Therefore we rejected our hypothesis H5d*.

According to multigroup regressions and SEM moderations GL definitely moderates the connection between SO and sales, hence or hypothesis H5 was accepted. Yet in case of the single SOs we experienced results contradicting the assumptions of our hypotheses, for which reason we rejected hypotheses H5a, H5c and H5d. *We examine the discrepancies of the multigroup and interaction moderations' results in the Discussion Chapter of our PhD thesis.*

38.3. The moderating effect of GL on the relationship between SO and net profit

To test our sixth hypothesis (H6), we first performed *interaction moderation* (SEM) to explore the moderating role of GL played in the relationship between SO and NP (Figure XXIX). As shown in the results of Table CVII, *the relationship of SO and NP is independent from the GL of pharmacy (H6)*. According to experiences stemming from interaction moderation *neither the main effects of Prospector, Analyser or Defender/Reactor SOs, nor the interaction effects derived from the product term of SOs and GL proved to be significant (H6a, H6c, H6d).* The structural model established for the estimation of pharmacies' profitability could explain only 6,5% (R^2=0,065) of NP's proportion of variance, which is no meaningful increase compared to the 3% explained by SOs. *Hence it can be deemed probable that GL*

does not moderate the relationship between SO and NP, which confirms the experiences of our interaction regression.

However, we examined the potential moderating effect of GL on the relationship between M&S's SOs and NP of pharmacies also via *multigroup moderation* (SEM) (Figure XXX). Our decision *was based on the fact that regressions run for the groups of urban and rural pharmacies denoted significant differences between the effect of particular SOs on profitability*. So we tried to reveal, whether the robust insignificant effects identified during interaction moderation change if we explicitly compare the effects of SOs on profitability between urban and rural pharmacies.

As depicted in Table CVIII, *the effect of SOs exerted on NP – contrary to experiences gathered from interaction moderation – produces significantly differing results depending on pharmacies' GL (H6)*. We found no difference between the profitabilities of Prospector, Defender/Reactor and Analyser SOs within cities. In case of rural pharmacies however we observed that Prospector SO had a significant positive (H6a), while Defender/Reactor (H6d) and Analyser SOs (H6c) had a significant negative impact on profitability.

The difference ($\Delta\chi^2$=43,2 és Δdf=29) of *„Unconstrained"* (χ^2=1632 and df=801) and *„Constrained"* (χ^2=1675,2 and df=829) *models is significant* (H6), as the critical value (0,95 and 28) is lower than the empirical one (43,2). *According to „path by path" analyses the effect of SOs on NP significantly differs between pharmacies run in both urban and rural environments for each Prospectors, Analysers and Defender/Reactors (H6a, H6c, H6d)*. The fit indices are as follows: CMIN/df=1109/722=1,537, CFI=0,869, RMSEA=0,052 and SRMR=0,0992. The value of the χ^2 test, as well as those of the RMSEA indicator comply with the criteria of methodological literature. The value of CFI indicator is tolerable with reservations, but SRMR indicator falls short of the recommended threshold value of 0,08. *According to multigroup moderation SOs were able to explain 21% (R^2=0,21) of NP's variance in rural environment, while in case of urban pharmacies the model's explanatory power amounted to only 1% (R^2=0,01).*

38.4. The evaluation of the moderating effect of geographical location on the relationship between strategic orientations and profitability

Experiences gathered from regressions and SEM yet again resulted in *contradictory results* regarding the moderating effect of pharmacies' GL on the relationship of SO and NP. According to *interaction* regression and moderation (SEM) *GL did not influence the relationship of Prospector, Analyser, Defender/Reactor SOs and profitability (H6)*. Yet results from *multigroup* regression and moderation (SEM) suggest that the *development of relationship between M&S's SOs and pharmacies' NP largely depends on urban or rural location (H6).*

According to results from *multigroup regression and structural moderation (SEM)* the Prospector SO's positive effect on profitability significantly increased within rural environments (H6a). *Therefore we accepted our hypothesis H6a.* Based on multigroup methods the effect of Analyser SO on pharmacies' NP got stronger in rural context, and eroded profitability – significantly according to SEM, and close to significantly in case of regression – of pharmacies pursuing similar SO (H6c). *This concurs with our presumptions, so we also accepted our hypothesis H6c.*

Both our multigroup regression and SEM results confirmed that NP of pharmacies following Defender/Reactor SO in the countryside significantly decreased compared to their urban counterparts (H6d). Since we anticipated this very effect for urban pharmacies, *we had to reject our hypothesis H6d*. According to multigroup techniques pharmacies' GL moderated the relationship between SO and NP. *We examine in detail GL's potential moderating effect on the relationship between pharmacies' SO and profitability, as well as possible explanations for discrepancies between results of interaction and multigroup moderations in Chapter 44 (Discussion).*

39. The combined moderating effect of PEU and geographical location on the relationship between strategic orientation and business performance

Due to methodological limitations of regression analyses we had to combine interaction and multigroup moderations – *thus performing a so-called moderated moderation (SEM)* – in order to test our hypotheses H7 and H8 and to examine to what extent the degree of PEU by pharmacy managers and pharmacies' GL „refine" the stochastic relationship between SO, as well as market effictiveness and financial profitability.

39.1. The combined moderating effect of perceived environmental uncertainty and geographical location on the relationship between strategic orientation and sales

In our hypothesis H7 we assumed that *changes in the degree of PEU exert varying effects on the relationship between M&S's SOs and SAL depending on the pharmacies' GL* (Figure XXXI). The results of moderated moderation (SEM), combining multigroup and interaction techniques are illustrated Table CIX.

Evidently Prospector SO had a significant and positive influence on SAL in both urban and rural environments. Although in the countryside the prevalence of Analyser SO lessens SAL parallelly to the decrease of PEU, yet even this effect only approximates significance (H7a). *Seeing as how changes in the degree of PEU had close to no effect on Prospector's SAL – not even in cities specified in our assumption – we rejected our hypothesis H7a.*

Prevalence of Analyser SO also showed no significant correlation with changes in the degree of PEU in either urban or rural pharmacies. Development of PEU by pharmacy managers – independently from GL – had no influence on Analyser's SAL (H7b). In the countryside Analyser SO exerted a slightly negative effect on turnover, yet this did not proved to be significant either. *Based on this we also could not accept our hypothesis H7b, as we did not register any changes in the otherwise negative relationship between Analysers and SAL.*

Defender/Reactor SO exerted a strong, negative effect on SAL, but its main effect proved to be significant only for rural pharmacies. Interestingly, a decrease in the degree of PEU by pharmacy managers did not significantly lessen turnover of rural Defender/Reactor pharmacies (H7d). Influence of decrease in PEU on the negative relationship between Defender/Reactor SOs and turnover only approached significance even in cities. *Our hypothesis H7d had also to be rejected, as it was PEU's decrease, not its increase that contributed to the not even significant lessening of SAL, which we registered not for rural, but for urban pharmacies anyway.*

Results for our hypotheses H7a, H7c and H7d confirmed that PEU – depending on GL – also did not influence development of relationship between M&S's SOs and SAL of pharmacies,

which is why we rejected our hypothesis H7 regarding the combined moderating effect of PEU and GL. According to experiences obtained by moderated moderation (SEM) main and interaction effects of SO and PEU explained 22,59% (R^2=0,2259) of the variance in pharmacies' SAL, which amounted to almost 31% in a rural context (R^2=0,3108).

39.2. The combined moderating effect of geographical location and perceived environmental uncertainty on the relationship between strategic orientation and profitability of pharmacies

In order to test H8 (Table CX) *we applied moderated moderation (SEM) also to further reveal the relationship between M&S's SOs and NP* (Figure XXXII), during which we examined whether changes in the degree of PEU exert a significant influence on the relationship between Prospector, Analyser or Defender SOs and profitability within groups of either urban or rural pharmacies.

According to the results of Table CX neither SOs' main effects, nor their interaction effects with PEU influenced pharmacies' NP in cities. Here the development of the relationship between SOs and pharmacies' profitability is independent from the degree of PEU. In the countryside main effects were stronger, but only the prevalence of Defender/Reactor SO decreased NP significantly. Within townships PEU's decrease also significantly worsened the profitability of pharmacies following Prospector SO, which otherwise can be viewed as positive facilitator of BP (H8a). *This partly contradicts our hypothesis, as we predicted this strengthening effect with the increase of PEU, which is why we rejected our hypothesis H8a.*

Changes in the degree of PEU had no significant effect on Analyser's NP in urban or rural environments whatsoever (H8b). We registered but one significant interaction effect, according to which rural Analyser pharmacies' profitability slightly improves in parallel to decrease of PEU. *Seeing as how Analyser's profitability insignificantly improves with with the decrease of the degree of PEU, we also did not accept our hypothesis H8b.*

Prevalence of Defender/Reactor SO – parallelly to changes in the degree of PEU by pharmacy managers – had no effect on NP (H8d). In the countryside the main effect of the Defender/Reactor SO – independently from the degree of PEU – significanctly worsened pharmacies' profitability, while positive interaction effect of PEU and Defender/Reactor SO did not even approach significance in urban and rural contexts alike. *Therefore our hypothesis H8d could not be confirmed either*. Experiences resulting from testing H8a, H8c and H8d confirmed that PEU, irrespectively to GL did not influence the relationship between M&S's SOs and pharmacies' NP, *hence we rejected our hypothesis H8 regarding the combined moderating effect of PEU and GL.*

Based on the structural model *main and interaction effects of SO and PEU managed to explain only 6,3% (R^2=0,063) of the variance of pharmacies' NP in cities, yet in rural context this amounted to as much as 27% (R^2=0,27)*. Interestingly by introducing GL, the main effect of PEU – originally showing no connection to profitability – on NP became significant in case of cities, according to which decrease of PEU improved the profitability of pharmacies.

40. The robustness of the connections – explored by multi-variate data analyses – in the relationship between strategic orientation and business performance

In the last empirical stage of our dissertation we examined the robustness of the interrelationships between SO, PEU by pharmacy managers, pharmacies' GL and BP established during the preceeding regression and structural analyses by integrating control variables that proved to be relevant based on results of the correlation matrix (Table XCIV). Our main interest lay in determining, *whether the influence of SOs' prevalence on effectiveness and profitability remains the same, if we filter the additional effects determining pharmacies' BP in our model.* We begin testing our hypotheses by describing the results regarding SAL of pharmacies (H9a).

40.1. The combined moderating effect of geographical location and PEU on the relationship between strategic orientation and sales by integrating relevant control variables

To test H9a we examined the potential influencing effects on the stochastic relationship of M&S's SOs and turnover of pharmacies by yet again performing a *moderated moderation (SEM)*. From the socio-demographic variables we included pharmacies' total area of space, ownership structure, as well as participation in equity- and relationship-based cooperations into our structural model. From site characteristics we integrated the proximity of competitor pharmacies, drugstores, gas stations and the vicinity of other retail units (Figure XXXIII).

According to Table CXI, Prospector SO continued to favorably influence SAL of pharmacies. That is, even the additional explanatory power of the control variables connected to turnover and integrated into our model could not manage to „suppress" Prospector SO's substantial contribution to SAL in either urban or rural environments. Interaction effect of Prospector SO and PEU remains negligible, yet decrease in PEU lessens SAL to an almost significant degree in the countryside. *The connections of Prospector SO and SAL established in earlier analyses were not modified notably even after including control variables, the only slight change encountered is that it showed a stronger contribution to SAL in cities, not in the countryside*.

Analyser SO exerted an insignificant influence on pharmacies' SAL after filtering the effects of control variables in both urban and rural environments. Decrease of PEU produced close to no additional effects, while in the countryside – complying with theoretical implications – it had a nearly significant positive impact on SAL. *Nature of Analyser SO's main and interaction effects with PEU on turnover did not change. It might be worth to mention that in the countryside the effect of Analyser SO on SAL showed significance, but the connections identified during former multigroup methods remain robust nonetheless.*

Defender/Reactor SO exerted negative influence on pharmacies' SAL in both urban and rural environments. In the countryside decrease in the degree of PEU did not significantly worsen Defender/Reactor's default suboptimal performance. Compared to connections established during preliminary analyses, the difference is that by eliminating effects of control variables pertaining to socio-demographic and site characteristics of pharmacies, prevalence of Defender/Reactor SO had a negative influence even on turnover of urban pharmacies. Furthermore, in cities decrease of PEU by pharmacy managers influenced pharmacies' SAL in a negative way, but similar to former analyses moderating effect of PEU is not significant. *Connections established for the relationship between Defender/Reactor SO and SAL remained*

robust, except for the main effect experienced in cities.

Main effect of PEU remained insignificant even after including control variables, but in cities increase of predictability varied with the increase of SAL. In the countryside decrease of PEU barely lessened turnover. Among socio-demographic variables and site characteristics integrated into the model only total area of space contributed in a significant, positive way to pharmacies' SAL. Explanatory power of the extended model by including control variables grew, and managed to explain 30,6% (R^2=0,306) of the variance in SAL within cities, as well as 42,1% in case of rural pharmacies. *Confirming our former experiences, filtering the effects of control variables demonstrated that SO's influence on BP is stronger in the countryside*.

Filtering the effects of control variables did not notably alter patterns found earlier for the relationship of pharmacies' SO and SAL in regard of PEU. *However, differences based on GL did moderately change or even disappeared in the relationship between Prospector, Analyser or Defender/Reactor SOs and SAL. Thus, we can only partially accept our hypothesis H9a.*

40.2. The combined moderating effect of GL and PEU on the relationship between strategic orientation and NP by integrating relevant contol variables

While testing H9b via *moderated moderation (SEM)* and by integrating relevant control variables we tried to find out, *whether connections established in former multivariate analyses remained robust for the relationship between SO and NP, and for the moderating effects of PEU and GL even after eliminating additional factors influencing profitability*. Our model included total area of space from socio-demographic attributes, vicinity of hospitals, medical stations, and other retail stores, as well as the number of passers-by near the pharmacy (Figure XXXIV). Results are summarised in Table CXII.

It is discernible that Prospector SO did not significantly influence NP of pharmacies in either urban or rural environments. Changes in the degree of PEU had an insignificant impact on the relationship between Prospector SO and NP within cities, yet just as in former moderated moderations its decrease significantly eroded profitability, which „suppressed" the effects experienced during preceding multigroup methods. *Conclundingly connections established for Prospectors' NP did not change in respect of PEU, while they did change slightly in respect of GL*.

Analyser SOs had an insignificant influence in both rural and urban environments even after introducing relevant control variables. *GL significantly moderated the relationship between Analyser SO and pharmacies' profitability, but we found a digression regarding PEU's moderating effect when integrating socio-demographic variables and site attributes*. Contrary to our former multivariate results – in line with theoretical implications – decrease in the degree of PEU showed positive significant correlation with NP of Analysers.

Prevalence of the Defender/Reactor SO exerted an insignificant influence on the development of NP within cities, but in case of rural pharmacies it still significantly eroded profitability. *Relationship between Defender/Reactor SO and NP did not change in respect of the degree of PEU even after eliminating control variables. GL, however – confirming our experiences from former analyses – moderated the relationship of Defender/Reactor SO and profitability even by integrating the effect of socio-demographic characteristics and site variables*.

Main effect of PEU remained significant in cities, while in the countryside PEU by

pharmacists' showed no connection to pharmacies' profitability. Amongst socio-demographic and site characteristics, total area of space had a significant positive influence on NP in both urban and rural contexts. Vicinity of retail units significantly enhanced profitability in cities, while in the countryside it was increase in numbers of passers-by that significantly contributed to pharmacies' NP. *Our structural model managed to explain 15,6% (R^2=0,156) of variance of pharmacies' profitability within cities, while in case of rural sites this was significanctly higher with a value of 40,7%. (R^2=0,407).* Eliminating the effects of control variables yet again confirmed our former experiences, according to which influence of M&S's SOs on BP is mostly critical in a rural context.

After filterig the effects of control variables, influence of SOs on changes of NP was only slightly altered. Only GL's moderating effect on Prospectors disappeared, while moderating effect of PEU continues to be relevant rather in the countryside. With the exception of rural Defender/Reactors, M&S's SOs altogether still explain pharmacies' profitability to only a minimal extent. *Hence our hypothesis H9b can also only be accepted partially*.

41. The evaluation of hypotheses tested in our dissertation

The main focus of our PhD thesis laid on the stochastic relationship between M&S's SOs and BP of pharmacies. We revealed via a multitude of mathematical-statistical methodologies the factors that could possibly moderate the relationship between SOs and pharmacies' BP within HPRDS, a sector best characterised by bureaucratic coordination mechanisms and limited competitive intensity. Based on this our hypotheses formulated in the earlier sections of the dissertation examined the potential moderating role of two industry-specific factors – namely pharmacies' GL and the degree of PEU by pharmacy managers – in the relationship between M&S's SOs as well as market effectiveness and financial efficiency.

We examined our hypotheses by hierachical interaction and multigroup regression analyses, as well as interaction, multigroup and moderated SEM moderations. By eliminating the effects of additonal industry-specific factors influencing pharmacies' BP (control variables) we also inspected how robust the connections established for the development of the relationship between Prospector, Analyser, Defender/Reactor SOs, as well as SAL and NP are. We summarised our answers to our hypotheses H1-H9 in tabulatory form in order to provide an easier way of intepretation of the several, often meticulous and fragmented methodological techniques (Tables CXIII to CXIV).

Table CXIII: Summarised evaluation of the results of our hypotheses formulated and tested in the doctoral dissertation I.

	HYPOTHESES	RESULTS
H1	The strength of the relationship between Prospector, Analyser, Defender SOs and the sales of pharmacies differs from each other	Accepted
H1a	The strength of positive the relationship between Prospector SO and sales of pharmacies exceeds the degree of the positive relationship between Analyser SO and sales of pharmacies	Accepted
H1b	The strength of the positive relationship between Prospector SO and sales of pharmacies exceeds the degree of the positive relationship between Defender SO and sales of pharmacies	Canceled
H1c	The strength of the positive relationship between Analyser SO and sales of pharmacies exceeds the degree of the positive relationship between Defender SO and sales of pharmacies	Canceled
H1d	Following Defender/Reactor SO makes a negative influence on the sales of pharmacies	Accepted
H2	The strength of the relationship between Prospector, Analyser, Defender Sos and the net profit of pharmacies differs from each other	Rejected
H2a	The strength of the positive relationship between Defender SO and the net profit of pharmacies exceeds the degree of the positive relationship between Analyser SO and the net profit of pharmacies	Canceled
H2b	The strength of the positive relationship between Defender SO and the net profit of pharmacies exceeds the degree of the positive relationship between Prospector SO and the net profit of pharmacies	Canceled
H2c	The strength of the positive relationship between Analyser SO and the net profit of pharmacies exceeds the degree of the positive relationship between Prospector SO and the net profit of pharmacies	Rejected
H2d	Following Defender/Reactor SO has a negative effect on the net profit of the pharmacies	Rejected
H3	The PEU moderates the relationship between M&S's SOs and sales of the pharmacies	Rejected
H3a	In parallel to increased degree of PEU the positive relationship between Prospector SO and the sales of the pharmacies becomes stronger	Rejected
H3b	In parallel to increased degree of PEU the positive relationship between Analyser SO and the sales of the pharmacies becomes stronger	Rejected
H3c	In parallel to increased degree of PEU the positive relationship between Defender SO and the sales of the pharmacies becomes stronger	Canceled
H3d	In parallel to increased degree of PEU the negative relationship between Defender/Reactor SO and the sales of the pharmacies strengthens	Rejected
H4	The PEU moderates the relationships between M&S's SOs and net income of the pharmacies	Rejected
H4a	In parallel to increased degree of PEU the positive relationship between Prospector SO and the net profit of pharmacies weakens	Rejected
H4b	In parallel to increased degree of PEU the positive relationship between Analyser SO and the net profit of pharmacies weakens	Rejected
H4c	In parallel to increased degree of PEU the positive relationship between Defender SO and the net profit of pharmacies weakens	Canceled
H4d	In parallel to increased degree of PEU the negative relationship between Defender/Reactor SO and the net profit of pharmacies strengthens	Rejected
H5	The GL of the pharmacies moderates the relationship between the SOs and sales of the pharmacies	Partially accepted
H5a	In urban context the positive relationship between Prospector SO and sales of pharmacies becomes stronger compared to rural areas	Rejected
H5b	In urban context the positive relationship between Defender SO and sales of pharmacies becomes stronger compared to rural areas	Canceled
H5c	In urban context the positive relationship between Analyser SO and sales of pharmacies becomes stronger compared to rural areas	Rejected
H5d	In urban context the negative relationship between Defender/Reactor SO and sales of pharmacies becomes stronger compared to rural areas	Rejected

Source: Table made by the author

Table CXIV: Summarised evaluation of the results of the hypotheses formulated and tested in the doctoral dissertation II.

HYPOTHESES		RESULTS
H6	The GL of pharmacies moderates the relationship between the SOs and net profit of pharmacies	Partially accepted
H6a	In urban context the positive relationship between Prospector SO and the net profit of pharmacies is weaker than in rural areas	Accepted
H6b	In rural context the positive relationship between Defender SO and the net profit of pharmacies is stronger than in urban areas	Canceled
H6c	In urban context the positive relationship between Analyser SO and the net profit of pharmacies is weaker than in rural areas	Accepted
H6d	In urban context the negative relationship between Defender/Reactor SO and the net profit of pharmacies is stronger than in rural areas	Rejected
H7	PEU in combination with GL moderates the relationships between M&S's SOs and the sales of pharmacies	Rejected
H7a	In urban context the increasing degree of PEU makes the positive relationship between Prospector SO and the sales of pharmacies stronger than that experienced in rural environment	Rejected
H7b	In urban context the increasing degree of PEU makes the positive relationship between Analyser SO and the sales of pharmacies stronger than that experienced in rural environment	Rejected
H7c	In urban context the increasing degree of PEU makes the positive relationship between Defender SO and the sales of the pharmacies stronger than that experienced in rural environment	Canceled
H7d	In rural context the increasing degree of PEU makes the negative relationship between Defender/Reactor SO and the sales of the pharmacies stronger than that experienced in urban environment	Rejected
H8	PEU in combination with GL moderates the relationships between M&S's SOs and the net profit of pharmacies	Rejected
H8a	In rural context the increasing degree of PEU makes the positive relationship between Prospector SO and the net profit of pharmacies weaker than that experienced in urban environment	Rejected
H8b	In rural context the increasing degree of PEU makes the positive relationship between Analyser SO and the net profit of pharmacies weaker than that experienced in urban environment	Rejected
H8c	In rural context the increasing degree of PEU makes the positive relationship between Defender SO and the net profit of pharmacies weaker than that experienced in urban environment	Canceled
H8d	In rural context the increasing degree of PEU makes the negative relationship between Defender/Reactor SO and the net profit of pharmacies stronger than that experienced in urban environment	Rejected
H9	The interrelations established as a result of the potential moderating influence of the PEU and GL – on the relationship between the SO and BP are robust after controlling for the effect of relevant industry-specific variables	Partially accepted
H9a	The observed relationships between the SOs of Miles and Snow and sales of pharmacies are robust	Partially accepted
H9b	The observed relationships between the SOs of Miles and Snow and net profit of pharmacies are robust	Partially accepted

Source: Table made by the author

42. The evaluation of the moderating effects on the relationship between strategic orientations and business performance

42.1. The role of PEU in the relationship between strategic orientation and sales

In the current subchapter we summarised our empirical experiences regarding the moderating effect of the degree of PEU by pharmacy managers and pharmacies' GL on the relationship between M&S's SOs and BP. *It is also here that we label the types of specification variables based on the correlation matrix* (Table LXXI), *as well as on the results of regression and structural models*. Tables CXV-CXVIII provide an overview of the results stemming from the multitude of mathematical-statistical methods.

Table CXV: The moderating effect of perceived environmental uncertainty in the relationship of strategic orientation and business performance

Moderating variable: **Perceived environmental uncertainty**		**Applied mathematical-statistical methods**											
Strategic orientation	Business performance	Hierarchical (interaction) moderated regression		Multigroup moderated regression				Interaction moderation (SEM)		Multigroup moderation (SEM)			
				High		Low				High		Low	
		β	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	-0,074	0,392	0,375	0,000	0,265	0,007	-0,057	0,448	0,401	0,000	0,248	0,033
Analyser	Sales	0,059	0,498	-0,171	0,074	-0,001	0,994	0,095	0,167	-0,174	0,088	0,021	0,850
Defender/Reactor	Sales	-0,099	0,172	-0,165	0,102	-0,304	0,002	-0,162	0,027	-0,147	0,199	-0,334	0,009
Prospector	Net profit	-0,075	0,424	0,158	0,145	0,036	0,734	-0,034	0,684	0,153	0,201	0,056	0,630
Analyser	Net profit	0,071	0,452	-0,123	0,207	0,086	0,420	0,060	0,442	-0,114	0,282	0,085	0,482
Defender/Reactor	Net profit	0,066	0,399	-0,207	0,066	0,009	0,935	0,045	0,589	-0,241	0,059	0,0012	0,918

Source: Table made by the author

Table CXVI: The moderating effect of geographical location in the relationship of strategic orientation and business performance

Moderating variable: **Geographical location**		**Applied mathematical-statistical methods**											
Strategic orientation	Business performance	Hierarchical (interaction) moderated regression		Multigroup moderated regression				Interaction moderation (SEM)		Multigroup moderation (SEM)			
				Urban		Rural				Urban		Rural	
		β	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	-0,039	0,615	0,276	0,004	0,396	0,000	-0,024	0,727	0,279	0,015	0,384	0,002
Analyser	Sales	-0,050	0,515	-0,028	0,773	-0,332	0,001	-0,077	0,244	-0,023	0,845	-0,302	0,013
Defender/Reactor	Sales	-0,016	0,814	-0,160	0,120	-0,290	0,002	-0,053	0,456	-0,134	0,280	-0,325	0,030
Prospector	Net profit	0,010	0,910	0,056	0,574	0,199	0,051	0,026	0,742	0,037	0,741	0,244	0,039
Analyser	Net profit	-0,019	0,822	0,028	0,793	-0,190	0,081	-0,091	0,233	0,079	0,524	-0,271	0,029
Defender/Reactor	Net profit	-0,093	0,237	0,028	0,800	-0,308	0,004	-0,104	0,203	0,006	0,961	-0,342	0,028

Source: Table made by the author

Table CXVII: Evaluation of the combined moderating effect of perceived environmental uncertainty and geographical location (Sales)

Moderating variable: **Perceived environmental uncertainty**		Moderating variable: **Geographical location**							
		Applied mathematical-statistical methods							
Strategic orientation	Business performance	Moderated moderation (SEM)				Moderated moderation (SEM) by integrating relevant, industry-specific control variables			
		Urban		Rural		Urban		Rural	
		β	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	0,311	0,002	0,342	0,000	0,262	0,010	0,204	0,049
Prospector*PEU	Sales	-0,023	0,814	-0,214	0,055	-0,030	0,761	-0,205	0,052
Defender/Reactor	Sales	-0,158	0,143	-0,304	0,002	-0,219	0,043	-0,232	0,017
Defender/Reactor*PEU	Sales	-0,188	0,085	-0,153	0,222	-0,196	0,073	-0,101	0,391
Analyser	Sales	-0,082	0,439	-0,180	0,081	-0,089	0,389	-0,130	0,089
Analyser*PEU	Sales	0,124	0,253	0,125	0,241	0,080	0,450	0,162	0,080

Source: Table made by the author

Table CXVIII: Evaluation of the combined moderating effect of perceived environmental uncertainty and geographical location (Net profit)

Moderating variable: **Perceived environmental uncertainty**		Moderating variable: **Geographical location**							
		Applied mathematical-statistical methods							
Strategic orientation	Business performance	Moderated moderation (SEM)				Moderated moderation (SEM) by integrating relevant, industry-specific control variables			
		Urban		Rural		Urban		Rural	
		β	**Sig.**	**β**	**Sig.**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Net profit	0,020	0,857	0,174	0,100	-0,066	0,561	0,051	0,631
Prospector*PEU	Net profit	0,017	0,876	-0,260	0,024	-0,023	0,826	-0,274	0,009
Defender/Reactor	Net profit	0,004	0,974	-0,298	0,003	-0,045	0,696	-0,276	0,005
Defender/Reactor*PEU	Net profit	0,131	0,277	0,069	0,592	0,156	0,182	0,074	0,532
Analyser	Net profit	0,007	0,955	-0,166	0,120	0,037	0,743	-0,157	0,121
Analyser*PEU	Net profit	-0,017	0,884	0,193	0,078	-0,006	0,959	0,230	0,022

Source: Table made by the author

It can be stated of the PEU variable – showing no connection with SAL – *that it did not moderate the relationship between Prospector and Analyser SOs and turnover according to either multigroup regression or structural analyses (SEM)* (Table CXV). This means that PEU plays the role of *Homologiser Moderator* variable in case of *Prospector SO* not connected to it, while it functions as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable in case of *Analyser SO* characterised by significant decrease in PEU. According to multigroup regression, as well as interaction and multigroup moderation (SEM) decrease in PEU significantly eroded SAL of *Defender/Reactor* pharmacies, so its role as a *Pure Moderator* can be assumed, although based on its insignificant interaction effect registered in hierarchical regression analysis it functions as a *Homologiser Moderator*.

Based on the moderated moderation (SEM) quantifying the combined moderating effect of PEU and GL it can be stated *that PEU did not moderate the relationship between M&S's SOs and SAL in either urban or rural environments* (Table CXVII). Therefore it functions as a *Homologiser Moderator* for *Prospector and Defender/Reactor SOs*, and as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable for *Analysers*.

42.2. The role of PEU in the relationship between strategic orientation and net profit

Seen as how PEU did not show a significant connection to either NP or prevalence of M&S's SOs, we assumed its role as a *Homologiser or Pure Moderator* variable in the relationship between SOs and pharmacies' profitability (Table CXV). Results of *interaction and multigroup techniques* used in our dissertation to inspect its potential moderating effect on the relationship between SOs and NP *exhibit a strong convergence*. According to this PEU had no significant moderating effect on the relationship between SO and profitability for either Prospectors, Analysers or Defender/Reactors, *meaning the effect of SOs – independently from the degree of PEU – proved to be insignificant on pharmacies' NP.* Based on this PEU functions as a *Homologiser Moderator* variable.

Based on the moderated moderation (SEM) quantifying the combined moderating effect of PEU and GL exerted on the relationship between SO and NP, PEU's moderating effect was only significant for Prospectors (Table CXVIII). According to this a decrease in PEU eroded profitability of rural pharmacies. In this case *PEU* functioned as a *Pure Moderator* variable in the relationship between Prospector SO and profitability, *while it continued to play the role of a Homologiser Moderator in case of Analysers and Defender/Reactors*. After integrating the relevant control variables PEU's moderating effect turned out to be significant for Analysers as well, which is why here it already functioned as a Pure Moderator variable, while it kept its Homologiser Moderator role for Defender/Reactors.

42.3. Role of GL in the relationship of strategic orientation and sales

It can be stated about the moderating role of GL – showing a connection with prevalence of Defender/Reactor and Prospector SOs and changes in SAL (Table LXXI) – on the relationship between SOs and SAL, that *there are notable differences between the results of interaction and multigroup methodologies*. According to interaction regression and structural moderation (SEM) GL did not moderate the relationship between SOs and turnover (Table CXVI). This means it functions as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable for Defender/Reactors, Prospectors and Analysers as well.

However, according to experiences gathered from multigroup techniques, pharmacies' GL

significantly moderated the relationship between Defender/Reactor and Analyser SOs and pharmacies' SAL (Table CXVI). This means that in these cases GL can be viewed as a *Quasi Moderator* variable, while for Analysers – exerting a robust positive effect on SAL in both urban and rural context – it can be interpreted as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable.

According to *moderated moderation (SEM)* examinations neither *Prospector SO's* strong, nor *Analysers*' insignificant influence on turnover changes depending on the pharmacy's urban or rural location (Table CXVII). Based on this GL's role in the relationship between the two SOs and SAL as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable can be confirmed. Negative effect of Defender/Reactor SOs on SAL within a rural context increases, yet eliminating the effects of control variables additionally determining BP eroded turnover of pharmacies even in cities. For this reason in case of Defender/Reactors GL functions as a Quasi Moderator during moderated moderation, while as an *Intervening, Exogenous, Antecedent, Suppressor or Independent specification variable after integrating control variables*.

42.4. The role of GL in the relationship of strategic orientation and net profit

Based on the results of the correlation matrix (Table LXXI) GL also showed a slight connection with NP in case of prevalence of Defender/Reactor and Analyser SOs. We obtained similar results for the moderating effect of GL on the relationship of M&S's SOs and NP of pharmacies as for SAL (Table CXVI). According to experiences from *interaction* methods GL generally *did not moderate* the relationship between *Prospector, Analyser or Defender/Reactor SO* and pharmacies' profitability. Therefore it can be interpreted as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable.

On the other hand, *multigroup* techniques yet again yielded different results, SEM based multigroup moderation for instance *showed a strong moderating effect of GL* in case of all three M&S's SOs (Table CXVI). Based on this GL's role as a *Quasi Moderator* can be assumed. *Multigroup regression analysis* resulted in a clear decrease of BP within rural context only in case of *Defender/Reactors*, thus for them GL functions as a *Quasi Moderator*, while for *Prospectors* and *Analysers* – although its moderating effects approaches significance – it serves as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable.

After integrating control variables additionally influencing profitability, *moderated moderations (SEM)* mostly confirmed the results of interaction techniques (Table CXVIII). SO's effect on NP changed as a function of the pharmacy's GL only in case of *Defender/Reactor* pharmacies. Thus, GL's function as a Quasi Moderator can be confirmed for them, just like its role as an *Intervening, Exogenous, Antecedent, Suppressor or Independent* specification variable in case of *Prospectors* and *Analysers*.

Based on their potential moderating effect on the stochastic relationship between the prevalence of M&S's SOs and BP exhibited by pharmacies, *we summarised in Tables CXIX-CXX the type of specification variables that PEU by pharmacy managers and GL can be considered as according to the results of our various mathematical-statistical examinations.*

Table CXIX: Evaluating the potential moderating role of PEU in the relationship of M&S's SOs and BP of pharmacies

	Strategic orientation	Business performance indicator	Hierarchical interaction regression	Multigroup regression	Interaction moderation (SEM)	Multigroup moderation (SEM)	Moderated moderation	Moderated moderation by integrating control variables
PEU	Prospector	Sales	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator
	Defender/Reactor	Sales	Homologiser Moderator	Pure Moderator	Pure Moderator	Pure Moderator	Homologiser Moderator	Homologiser Moderator
	Analyser	Sales	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable					
PEU	Prospector	Net profit	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Pure Moderator	Pure Moderator
	Defender/Reactor	Net profit	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator
	Analyser	Net profit	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Homologiser Moderator	Pure Moderator

Source: Table made by the author

Table CXX: Evaluating the potential moderating role of GL in the relationship between M&S's SOs and BP of pharmacies

	Strategic orientation	Business performance indicator	Hierarchical interaction regression	Multigroup regression	Interaction moderation (SEM)	Multigroup moderation (SEM)	Moderated moderation	Moderated moderation by integrating control variables
Geographical location	Prospector	Sales	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable					
	Defender/Reactor	Sales	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable	Quasi Moderator	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable	Quasi Moderator	Quasi Moderator	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable
	Analyser	Sales		Quasi Moderator		Quasi Moderator	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable	
Geographical location	Prospector	Net profit		Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable		Quasi Moderator	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable	
	Defender/Reactor	Net profit				Quasi Moderator	Quasi Moderator	Quasi Moderator
	Analyser	Net profit		Quasi Moderator		Quasi Moderator	Intervening, Exogenious, Antecedent, Suppressor, Independent specification variable	

Source: Table made by the author

43. Findings

In our PhD research we assumed that *in a sector combining the microeconomic attributes of both public and private goods*, as well as characterised by the prevalence of *bureaucratic coordination mechanisms* and strong regulation by state authortites, pharmacies develop more or less conscious behavioural patterns of adaptation in regard to turbulently changing environmental conditions. Based on strategic management's scientific literature and in-depth interviews with representatives of HPRDS we decided the strategic typology of Raymond Miles and Charles Snow would serve as a sufficient theoretical frame for uncovering the implications of pharmacies' SO and BP. Relevance of our decision was backed from a theoretical, methodological and managerial point of view as well by the fact that we examined the emergence of Prospector, Analyser and Defender/Reactor SOs within a sector characterised by limited competive intensity, as well as significant structural and legal transformations, and which is occupied mainly by microenterprises interested in developing consistent SOs and avoiding suboptimal BP. *Below we summarised the „fragmented" results detailed in the methodological chapters in the form of brief, comprehensible statements:*

1. Our dissertation revealed *that the 4 original strategic behavioural patterns of M&S can not be observed in the HPRDS* characterised by special contingencies. According to the results of EFA and CFA analyses performed at the discriminant validity examinations the behavioural characteristics of Defender and Reactor SOs were loaded in a single factor, *thus by identifying the Defender/Reactor „mix"* – beside Prospectors and Analysers – *3 relevant SOs have been observed in the environmental adaptation of pharmacies.*

2. Based on EFA and CFA structures the *Defender/Reactor SO observed in HPRDS can not be considered as a distinct, separate, organic, „hybrid" behavioural pattern, but rather as a particular „mix" of Defenders and Reactors*. This SO – according to the scrutiny of pharmacists' answers – is dominated by the inconsistent behavioural features of Reactors.

3. *The 2 „pure" and 1 „mix" SOs identified within HPRDS markedly dissever from each other*, and the behavourial characteristics of Prospector, Analyser and Defender/Reactor SOs also significantly differ based on post-hoc Tukey, Scheffe and Bonferroni tests.

4. *We experienced but diminutive differences between the results of the two successfully applied strategy extraction techniques, namely the multi item scale of Segev and the self-typing pharagraph method.* Pharmacies identified as either Prospectors, Analysers or Defender/Reactors received near identical classification after comparing results of the two methods. Ratio of pharmacies classified into the same SO by the two measurement instruments exceeded 75%. *Convergent validity of the two measurement tools was also confirmed in the classical interpretation too, by performing statistical tests.*

5. Regarding the distribution ratio of M&S' SOs in relation to each other we found that despite the increased competitive intensity as a consequence of the liberalisation process between 2006 and 2011, *relative majority of Defender/Reactor pharmacies – exhibiting suboptimal BP and considered as an inconsistent SO* – continues to prevail in HPRDS. *These are followed by Analysers, while well-performing Prospector pharmacies*, that view turbulent legal changes as business opportunities and provide explicit answers by expanding their range of products and services, *are in the relative minority.*

6. *Managers of pharmacies following different SOs perceived changes in environmental*

conditions and in behaviour of industrial stakeholders to be unpredictable to various degrees. Analysers significantly perceived changes in external conditions and behaviour of key stakeholders of drug supply chain to be more predictable, while we found no substantial differences between Prospectors and Defender/Reactors in this regard.

7. *We encountered no significant difference between groups characterised by either low or high PEU regarding the emergence of Prospector, Analyser and Defender/Reactor SOs and prevalence of their behavioural attributes.* Similarly, when we examined the presence of pharmacies identified as Prospectors, Analysers or Defender/Reactors *within groups of pharmacy managers characterised by either low or high PEU via association tests, we also did not find significant differences in the distribution ratios of SOs*.

8. Within HPRDS, *pharmacy manager's conscious choice of strategy had a stronger impact on the degree of their perceived unpredictability of the environment* than the extent to which external industrial conditions, strictly regulated by the state determined pharmacies' margin in selecting and following their SOs.

9. *Sales* of pharmacies following the observed *Prospector, Analyser and Defender/Reactor* SOs in the HPRDS are *significantly different. Sales* of pharmacies pursuing *Prospector* SO have *exceeded* the turnover of *Analysers and Defender/Reactors*.

10. *The profitability of pharmacies pursuing Prospector, Analyser and Defender/Reactor SOs showed no significant difference*. Although net profit of Prospectors slightly exceeded the profitability of Analysers and Defender/Reactors, this gap did not prove to be significant.

11. In terms of *effectiveness* Prospectors and Analysers, rated as viable SOs in scientific literature, surpassed significantly the BP of pharmacies pursuing inconsistent Defender/Reactor SO, but this difference proved to be insignificant regarding *profitability*. *Thus, the 1. recommendation of M&S on BP has by and large been fulfilled in practice.* As for *differences between BP of viable SOs* it can be stated that *sales of Prospectors exceeded significantly the turnover of Analysers.* Considering *net profit Prospectors had only an insignificant edge on Analysers*, so the *2. recommendation of M&S on BP* – which proposed that the consistent SOs perform equally well – *could not be verified* based on our research experiences.

12. Experiences stemming from regressions and SEM analyses altogether confirmed that – not counting a few exceptional cases (e.g. Prospectors' profitability within a rural context, Defenders' sales in urban environments) – *the degree of PEU by pharmacy managers did not moderate the relationship between pharmacies' SO as well as sales and net profit*.

13. *We experienced mixed results regarding the potential moderating effect of pharmacies' GL on the relationship between M&S's SOs and BP.* According to interaction techniques GL does not, while based on multigroup methods it indeed does exert a moderating influence on the relationship of pharmacies' SO, sales and net profit. It is observable that the effect of Prospector, Analyser and Defender/Reactor SOs' prevalence on BP increases in rural context, which can be characterised by less favorable conditions of demand.

14. The majority of the revealed interrelations for the development of PEU's and GL's potential moderating effect on the stochastic relationship between M&S's SO and BP *remained robust after controlling for variables originally having a significant effect on*

the effectiveness and profitability of pharmacies. The influence of pharmacies' SOs on BP has not been "suppressed" by such sector-specific and socio-demographic characteristics (e.g. total area of space, number of employees) and variables pertaining to pharmacies' sites (e.g. number of people passing-by the pharmacy, vicinity of healthcare institutes and retail stores), which had substantial additional effect on pharmacies' BP.

15. According to our regression and SEM analyses prevalence of M&S's SOs – depending on the methodological specifics of the various techniques – by themselves managed to explain between 16,5 and 23,5 % of variance found for pharmacies' SAL. By integrating PEU this did not increase significantly (17,6 to 30,2%), showing results between 19,3 to 21% for a low, and 24,4 to 26% for high PEU. By including GL and examining its combined effect with PEU 13,1 to 31,8% of turnover's proportion of variance can be explained by M&S's SOs, which amounted to 13,1 to 22,59% in cities, and to as much as 31,08% in the countryside. Extended models by socio-demographic and site characteristics explained 30,6 to 48% of sales' proportion of variance, depending on the context's urban or rural nature. *Therefore M&S's SOs can be viewed as useful proxy variables in explaining pharmacies' SAL*.

16. Based on our research M&S's SOs by themselves could only explain 3 to 4,4% of proportion of variance found for pharmacies' NP. According to interaction techniques this barely increased to 5,4 to 6,5% by including PEU, yet multigroup techniques show that in a context characterised by high PEU this can amount to as much as 12 to 14%, while it results in around 1% for low PEU context. By integrating GL and inspecting its combined effect with PEU, M&S's SOs – although explaining only 0,5 to 6,3% of the variance in pharmacies' turnover within cities – managed to explain as much as 15,5 to 27% of the same in the countryside. By adding further socio-demographic and site characteristics, the explanatory power of the model prediciting pharmacies' net profit increased to a maximum of 18,6% in cities, and 40,7% in the countryside. *According to our results SOs proved to be less adequate proxy variables of profitability*.

44. Discussion

In our Discussion we make an attempt at *interpreting and approaching results and findings gained for the main theoretical constructs of our thesis in a more „critical" way*. Below we look for factors capable of explaining the more interesting results regarding the connections of SO, PEU, GL and BP. For a deeper interpretation of open questions and unclear research experiences we strived to uncover the potential effect of theoretical and methodological reasons, as well as industry-specific characteristics.

1. According to our results within the HPRDS following a Prospector SO proved to be the most successful, *as their SAL significantly, while their NP insignificantly, but nonetheless exceeded BP of Analyser and Defender/Reactor SOs*. Prevalence of Propsectors' idealtypical behavioural characteristics had a positive effect on the development of SAL, even independently from the degree of PEU. *Although decrease of pharmacy managers' PEU insignificantly worsened Prospectors' turnover and profitability in cities, this negative influence was anymore found to be significant for pharmacies operating in rural context*. Prospectors realised highest SAL in case of both urban and rural pharmacies, it has to be noted however, that Prospector SO had a stronger effect on SAL of pharmacies in the countryside than in cities.

Prevalence of Prospector SO significantly increased profitability of rural pharmacies, but had only an insignificant effect on it in cities. Our experiences rather confirm the results of those M&S research, that found a difference in BP of viable SOs (Abernethy-Guthrie, 1994, James-Hatten, 1995, Aragón-Sanchez – Sanchez-Marín, 2005, Bastian-Muchlish, 2012, Talpová, 2012). Scientific literature offers numerous studies, according to which Prospectors' BP exceeds that of Analysers and Defenders, but it is uncommon for this to also show – even though insignificantly – in profitability and not only effectiveness. Regarding HPRDS, characterised by lower competitive intensity the „layman" would assume *that income is secure, yet despite the fact that cost management is not one of Prospectors' main strengths* (Hambrick, 1983a, b), *it is still their NP that is highest* (Hawes-Crittenden, 1984, Croteau-Bergeron, 2001, 1999, DeSarbo et al., 2005).

2. Contrary to theoretical implications the evaluations given by pharmacists to PRO_6 item of Segev scale *(„Our pharmacy's attempts at introducing new products and pharmaceutical services often prove not to be successful and profitable")* varied in the opposite direction to Prospector SO's other behavioural characteristics. According to past research Prospectors – characterised by continuous diversification – by broadening their range of products and services, often enter markets, where their operation is not always profitable (McKee et al., 1989, Woodside et al., 1999, Di Benedetto-Song, 2003). However based on our EFA and CFA analyses this behavioural aspect functioned as an item that loaded on Prospector SO as a factor with a negative factor loading. This was something we already concluded based on the results of our measurement tools' qualitative testing. *In HPRDS it can be interpreted by still rating attempts of Prospectors – leading introduction of product/service innovations to market – as profitable*.

   Our presumpiton was confirmed by the fact that item PRO_6 showed a negative correlation with NP, and also that Prospector pharmacies' profitability exceeded, although not significantly that of Analysers and Defender/Reactors. *Profitability of Prospectors' innovation attempts can be potentially explained by several industry-specific characteristics*. For instance, expansions of pharmacies' range of products and services are mainly realised within categories of OTC drugs and other products that can be marketed at a higher margin of profit (Desselle-Zgarrick, 2004, Bliss, 2007). Contrary to this, margin of profit of prescription (Rx.) products, that provide most of the turnover of pharmacies less interested in diversification, showed a steady decrease in recent years due to severe restrictions of the pharmaceutical budget and the spread of generic drugs (Bodrogi et al., 2010, Dankó, 2012). In light of this it can be deemed probable, why item PRO_6 showed a „reversed" correlation with Prospector SO's other behavioural characteristics despite theoretical expectations.

3. Despite insignificant results, based on the majority of our empirical tests prevalence of Analyser SO worsened BP to an almost significant degree for rural pharmacies. *It is possible that in their case the „over-analysis" of turbulent and complex environmental conditions received too much attention, which could have impaired reactivity and obstructed explicit managerial decision-making* (Hambrick, 1983b, Zahra-Pierce, 1990, Forte et al., 2000, Ghobadian-O'Reagan, 2005). It is likely, that rural pharmacists *also lacked sufficient management skills and competences for successfully implementing Analyser SO* (Di Benedetto-Song, 2003, DeSarbo et al., 2006, Mitev-Bauer, 2008a). For pharmacies specialised in conventional Rx. drugs competing with other settlements' pharmacies and other healthcare or retail providers proves to be a huge challenge.

Financial resources necessary to introduce new products and services are often scarce, suitable marketing skills for reaching new patient segments are often lacking, which makes it more difficult to implement the complex Analyser SO. In contrary to Prospectors and Defender/Reactors, decrease in Analyser pharmacy managers' PEU did not absolutely result in a lessening of BP, *and regarding SAL Analyser pharmacies' BP worsened significantly within a context characterised by an explicitly high PEU.* This is consistent with theoretical implications of M&S, as according to the authors' guidelines *the essence of Analysers' behaviour lies in exploring environmental conditions to the highest possible degree and in predicting their changes* (McDaniel-Kolari, 1987). By failing to do this, they have to face suboptimal BP (Hambrick, 2003, Akbolat, 2009). At the same time however, in light of the balanced effectiveness and profitability registered for Analysers in earlier research (Snow-Hrebiniak, 1980, Segev, 1989, Tan, 2002, Pleshko-Nickerson, 2008), this SO's insignificant effect on BP is somewhat surprising.

4. Prevalence of Defender/Reactor SO mostly exerted a significant negative effect on pharmacies' BP. *Seeing as manifestations of the content elements of this SO are dominated by Reactors' behavioural characteristics, our result complies with experiences of most M&S research* (Parnell et al., 2000, Slater-Olson, 200, DeSarbo et al., 2005, Garrigos-Simon et al., 2005). At the same time, being aware of HPRDS' contingencial attributes, we would not have been surprised, if Defender/Reactors' BP had turned out to be optimal. Some publications brought to attention that within industries characterised by bureaucratic coordination mechanisms and limited competitive intensity even companies following inconsistent SOs might prove to be succesful (Snow-Hrebiniak, 1980, Rajagopalan, 1997, Meier et al., 2007).

   Our results however do not confirm these experiences, as Defender/Reactors produced an acceptable BP only in cities. Additionally, with decrease in the degree of PEU by pharmacists the prevalence of this SO significantly or almost significantly reduced pharmacies' SAL, which negative effect was especially strong in the countryside. *It is probable, that cities' more favorable demand conditions are to some degree able to compensate negative effects of Defender/Reactors characteristics less succesful in environmental adaptation*. As it seems, despite the „quasi" monopolised position demarcated by size of population and geographical distance and the margin of profit secured for Rx. drugs, Defender/Reactor pharmacies perform poorly even within this regulated sector.

   Nevertheless, the retreating Defender/Reactor SO significantly reduced pharmacies' turnover within a rural context. *It is noteworthy, that Defender/Reactor pharmacy managers in cities with more favorable perspective of BP perceive the – otherwise turbulently changing – environment as less uncertain* (Oosthuizen, 1997). *In their case decrease in BP caused by „becoming too comfortable" is not significant only because the more favorable conditions of demand provide them with some protection for a shorter or longer time, while lack of explicit strategic responses leads to an immediate decrease in BP within the smaller settlements* (McKee et al., 1989, de Aguiar et al, 2014, Helmig et al., 2014). After eliminating the effects of control variables it became evident, that Defender/Reactor SO is not an appropiate answer to the challenges of a turbulently changing environment, and thus leads to suboptimal BP.

5. *Difference in results* shown by *multigroup and interaction techniques* aimed at uncovering GL's potential moderating effect can be viewed upon as the single biggest

methodological „mystery” of our disstertation. Interaction regressions and structural models showed no moderating effect of GL on either SAL or NP. Contrary to this, according to multigroup regressions and structural models prevalence of Defender/Reactor and Analyser SOs worsens pharmacies' turnover more strongly in the countryside. Also, in case of NP rural Prospectors' positive, while Defender/Reactor and Analyser SOs' eroding effect on BP is enhanced as compared to cities.

When further examining these contradicting results we performed multigroup and interaction techniques again *by operationalising contexts characterised by either low or high PEU, as well as urban or rural locations as dichotomous variables not coded by 0 and 1, but by 1 and 2 instead* (Baumgartner-Homburg, 1996, Klarmann, 2011, Chatterjee et al., 2013). Our assumption at this point was, that the influence of product terms quantifying the moderating effect would change in case of interaction methodology, if one of their factors is not 0. *However, our results did not change even after repeatedly running the models*.

Based on in-depth interviews with representatives of key sectoral stakeholders conducted beforehand and after obtaining our results, we accepted the experiences gathered from multigroup mathematical-statistical techniques in our dissertation. It seems logical, that SO exerts a more substantial impact on BP in case of rural pharmacies characterised by less favorable demand conditions, than in case of urban pharmacies characterised by larger population, higher purchasing power and a diversity of patients’ needs and preferences. We are nonetheless aware of the fact, that the contradicting results of the interaction and multigroup techniques applied for the examination of GL's moderating effects provide one of the critical surfaces of our PhD thesis.

6. Based on both scientific literature and our in-depth interviews we predicted a notable contribution of site characteristics to BP (Bauer-Mitev, 2001, Roberts-Keith, 2002, Pillittere et al., 2009). The correlation matrix (Table XCIV) also unveiled numerous significant connections between these variables and pharmacies' SAL and NP. Yet when applying more complex methodological techniques and when integrating them with SO, PEU, GL and basic socio-demographic characteristics, *site attributes' added value to the explanation of BP proved to be marginal*.

   It was only the number of passers-by the pharmacy that exerted a significant positive effect on both SAL and NP. Close vicinity of retail units had a positive effect on NP, but did not influence SAL. Curiously even the effect of hospitals’ and other healthcare institutions’ vicinity only approached significance. Pharmacies' BP hence was determined rather by socio-demographic characteristics and SO, collectively „suppressing” partial effects of site attributes. *Our result contradicts the majority of retail economics' empirical experiences* (Huff, 1964, Achabal, 1982, Bauer-Mitev, 2001, Levy-Weitz, 2012).

7. Based on both studies regarding pharmacies' management and the in-depth interviews conducted with representatives of key industrial stakeholders we expected pharmacies' BP to be largely determined by socio-demographic characteristics (Mitev-Bauer, 2008c, Szabó, 2009, Feller, 2010). According to Table XCIV, if we handle these factors separately and inspect their correlation with BP, ownership structure, participation in a strategic alliance or procurement association, the total area of space of the pharmacy and offcina, as well as number of employees all show a significant connection with changes of SAL. Yet when integrating above variables into the more complex regression and SEM

analyses with SO, PEU, GL and site characteristics, *only the variables total area of space and number of employees exerted a significant influence on changes of turnover*.

Number of employees is more of a consequence than a cause of SAL, as probably the basic relationship of „the higher the turnover, the more employees are needed" prevailed (Bliss, 2007, Helmons et al., 2014). It is irrealistic to assume pharmacies would hire more employees just in order to generate SAL by directing more human resources on expanding their portfolio, on stock management and marketing activities. The significance of *total area of space* as compared to the officina's size is surprising, *as based on conventional marketing logic it is the larger sales area that leads to higher SAL*, not larger storage room, back office or laboratory (Turley, 2000, Desselle-Zgarrick, 2004, Feller, 2010). *Area of officina and pharmacies' total space however correlate with each other*, which could confirm the sectoral experience according to which a sizeable „back office" capacity is needed in order to run pharmacies generating high turnover and offering a wide range of products (Christopher-White, 2009, Agárdi, 2011). Based on regression and SEM models, from amongst socio-demographic characteristics only total area of space exerted a significant positive effect on changes in NP.

8. According to best fitting EFA and CFA structures Defender/Reactors can not be regarded as representing a perfect „mix" of the Defender and Reactor SOs. Based on its factor loading value item REA_4 – *„In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients"* – fit more to Prospector SO. It is partly due to this phenomenon that when assigning pharmacies to SOs the sum of pharmacies identified as Defenders and Reactors in case of the 4 factorial Segev scale's results did not equal the sum of Defender/Reactor pharmacies observed in the 3 factor solution.

   The theoretical and methodological doubts underlying the discrepancy are not without concern, as they raise the question, why a viable SO would adopt the characteristic of an inconsistent behavioural pattern (Zahra-Pierce, 1990, Moore, 2005). Although item REA_4 does not correlate too strongly with the Prospector factor, this only partially answers the question. It is likely, that item REA_4 has to be re-formulated, in order to „urge" respondents more clearly towards one of the SOs. *Further development of the Segev scale* however exceeds the limitations of our dissertation and validating any changes have to be *the methodological objective of a new research* (James-Hatten, 1995, Hambrick, 2003, DeSarbo et al., 2006).

9. After performing EFA and CFA analyses on the Segev scale we found that based on its factor loading item DEF_5 – *„To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors."* – showed correlation with Analyser SO instead of Defender factor. M&S theory rather suggests that downward pressure on expenses and prices in order to preserve efficient operations and stable product/market segments is a behavioural characteristic of Defenders (Snow-Hrebiniak, 1980, Kabanoff-Brown, 2008, Song et al., 2008). We however believe that conscious use of pricing policy means fits with Analysers' profile, especially on a market, where the degree of competitive intensity abruptly increased after 2006 and where for a long time the existence of competitor pharmacies counted as a taboo theme for several stakeholders (Conant et al., 1990, Jusoh-Parnell, 2008, Talpová, 2012).

   A possible explanation would be that within HPRDS pharmacies following Low Cost

Defender and Differentiated Defender SOs can be observed (Walker-Ruekert, 1987, Slater-Olson, 2000), amongst which it is certainly the former that tries to keep its patients with lower prices. This however is less probable due to the fact that Defender management attributes rather tended to form a common SO with the characteristics of inconsistent Reactors. We are not in possession of valid and reliable experiences for answering this question, as in order to do so we should have formulated paragraphs for not 4, but 5 SOs in the self-typing paragraph method. *Furthermore, to the best of our knowledge no multi-item measurement instrument for identification of Low Cost and Differentiated Defenders is available* (James-Hatten, 1995, Olson et al., 2005)*, and the development of such a scale was not an objective of our research.* Therefore it can not be decided, whether the poorly performing Defender/Reactor pharmacies have the behavioural aspects of Low Cost or rather that of Differentiated Defenders besides the dominance of Reactor attributes.

10. The „mix-up" of M&S's SOs' behavourial characteristics appeared in the focus of research during recent years (DeSarbo et al., 2006, 2009, DeSarbo-Grewal, 2008, Helmig et al., 2014). Progress of multivariate mathematical-statistical methods made it possible *to uncover environmental adaptation behavioural patterns complying much more with reality instead of classifying pharmacies to idealtypical SOs artificially created by academics* (Hambrick, 2003). In our Ph.D. thesis we determined that micro and small enterprises functioning within HPRDS, characterised by bureaucratic coordination mechanisms, *indeed develop enduring adaptation patterns, although there are 3, not 4 of these SOs, and they are also not „pure", but „mixed"*.

    Earlier research tended not to surpass the identification of „mixed" adaptation patterns (Pinto-Curto, 2007, Kabanoff-Brown, 2008), thus *our thesis is certainly novel in the aspect that it examined the content elements, reasons and consequences on BP of abovementioned „mix-ups"*. Our dissertation strived to markedly distinguish between simple the „mixture" and „organic" connection of behavioural characteristics. We demonstrated via diverse multivariate methodologies, *that 1) the factor structure of the Defender/Reactor SO is dominated by Reactor behavioural aspects, and 2), the mix of these do not result in an organic, hybrid adaptation pattern*.

    Based on our results one probable reason for this is that although due to turbulent environmental changes pharmacies previously following Reactor SO launched a conscious process to change their strategies, but these initiatives are still at an early stage (Mintzberg-McHugh, 1985). As – based on their behavioural aspects of adaptation – it is Defenders standing closest to Reactors, it might appear logical that these firms took their first steps towards the development of latter SO. However in HPRDS BP of Prospector and Analyser SOs exceeded that of Defender/Reactors, so *it can be assumed that in the future latter ones will also invest more into the development of less passive and retrieving SOs*. Development of managerial skills and pharmacists' competences required for this count as promising research areas and sectoral policy challenges.

11. M&S's SOs – ceteris paribus – showed a significant connection with the changes of pharmacies' SAL, but we found no substantial contribution of their influence on pharmacies' NP. *We indicated in the correlation matrix (Table LXXXI) that pharmacies' SAL and NP were closely connected to each other in our sample*. Based on this alone we can not yet assume a causal relationship between these two BP indicators, but the question arises, *that if SOs had a significant influence on turnover, and we also*

experienced a positive significant connection between SAL and NP, then why does SO not contribute substantially to the development of pharmacies' NP?

It is possible, that changes in SAL could be better explained by integrating additional management characteristics of tactical and operative level, this however would fall outside the frame of our thesis. *It is presumable, that SAL plays the role of a mediating variable in the stochastic relationship between SOs and NP, i.e. prevalence of Prospector, Analyser and Defender/Reactor SOs exerts an indirect influence on profitability via turnover* (Baron-Kenny, 1986, Baumgartner-Homburg, 1996). According to our results in the HPRDS the implication of PIMS research seems to be slightly confirmed, namely that changes of BP indicators (SAL) determine profitability of enterprises (NP), although not significantly (Buzzell-Gale, 1987, Ambler-Clark, 2001) in our analyses.

12. Apart from PEU's by and large insignificant moderating effect on the relationship between SOs and BP, it still exerted some influence on changes of pharmacies' BP in some cases. We point towards the potential worsening of BP caused by „becoming too comfortable" parallelly to a decreased degree of PEU, *as there indeed were some situations, when a decrease of PEU and pharmacies' BP exhibited correlation* (e.g. in case of turnover of urban pharmacies after filtering control variables). We have to note that strategic literature is no stranger to the viewpoint according to which managers judge the development of environmental conditions and stakeholders' behaviour based on the current BP of their enterprise (Swamidass-Newell, 1987, Daft et al., 1988, Waldman et al., 2001, Bastian-Muchlish, 2012).

    It is however probable *that this viewpoint did not prevail in our research, as we did not experience a general connection between PEU and BP* (Table LXXI). We can not state, either, that BP was effected directly by perception of the turbulent changes occuring within the HPRDS. Based on our fragmented results we can only say, *that in case of certain GL and site characteristics decrease in the degree of PEU – via implementation of SO – might exert a significant or marginal influence on BP.*

13. One of our PhD thesis' experiences most worthy of consideration is that *pharmacy managers' conscious choice of strategy* had a stronger impact on the degree of their perceived unpredictability of the environment, than the degree to which pharmacies' margin in selecting and following SOs was *determined by contingencial conditions* strongly regulated by bureaucratic coordination mechanisms. Yet according to implications of contingency theory (Lawrence-Lorsch, 1967, Khandwalla, 1972, Hofer, 1975, Russell-Russell, 1992) and the experiences of primary qualitative research we predicted the opposite of this – i.e. dominance of environmental determination – in contrary to managers' conscious choice of strategy (Child, 1972, Schoonhoven, 1981, Child, 1972, Sharma 2000, Aragón-Correa – Sharma, 2003, Boyd et al., 2012).

    There are several possible explanations for our results, the most idealistic being that pharmacists within HPRDS recognised (e.g. because of large variations in BP) the necessity of evolving a consistent SO compliant with pharmacy's local attributes, resources and competences (Barney, 1986, Augier-Teece, 2009). In turn, pharmacists pursuing different SOs probably *perceive changes of environmental conditions and stakeholders' behaviour differently – in a manner fitting their SO and confirming their own choice* (Di Benedetto-Song, 2003, DeSarbo et al., 2005, Song et al, 2007).

It might also come to mind, *that the various adaptation patterns of M&S are no direct „products" of pharmacy managers, but rather indeed the results of the turbulent environmental changes of 2006-2011.* Although not apparent from our cross-sectional study, it appears possible that today's distinctly different SOs evolved due to the environmental determination from a few years ago (Drazin-Van de Ven, 1985, Hrebiniak-Joyce, 1985). „Defeat" of the contingency theory may have also been partly brought forth by methodological causes (Podsakoff et al., 2003): in regard of pharmacy managers' PEU significant difference between SOs was primary caused by the prevalence of Analyser SO's behavioural aspects. *Analyser SO is a quite „likeable and preferred" strategic option* amongst respondent pharmacy managers, as it emphasises balance, i.e. conventional pharmaceutical and innovative business practice to an equal degree, thus dominance of the „managerial choice" theory's implications may have been partly caused by respondents' „tendency toward the middle option" (Baron, 1996, Albaum, 1997).

45. Limitations of our dissertation and potential directions of future research

In below section we formulated directions of future research aimed at handling limitations encountered in our dissertation, as well as faults and deficiencies that arose during the various stages of empirical examination. *Amongst the limitations of the thesis we find theoretical and methodological deficiencies equally*, for which reason we tried to classify and connect both the study's limitations and future research opportunities according to this distinction.

1. Both the Segev scale and the self-typing paragraph method applied for identification of the SOs primarily *focus* on the first stage of the evironmental adaptation cycle, namely *on aspects of the entrepreneurial problem*. In future both the engineering and administrative phases should play a greater role in identifying Prospectors, Analysers, Defenders and Reactors, even in cases of similar micro and small enterprises. *For this measurement instruments directed at the management characteristics of engineering and administrative problems have to be developed (e.g. multi-item scales).* Currently this was not possible, as both the conditions of data collection and research objectives were rather aimed at testing the relevance of M&S's adaptation patterns within a regulated sector. Scales operationalising the engineering and administrative areas could possibly provide a more refined picture of pharmacies' environmental adaptation, at the same time producing more valid and reliable results regarding the classification of companies to SOs.

2. Prevalence of the Prospector, Analyser and Defender/Reactor SOs identified by the measurement instruments applied in our dissertation *did not contribute substantially to the explanation of pharmacies' profitability*. This may have been partly caused by the methodological imperfection, that strategy extraction techniques used during our research did not lay enough emphasis on the approach of engineering and administrative problems observed in pharmacies' management. Scales directed at the examination of tactical and operative level management characteristics of pharmacy operation's „functional" areas (for instance stock management, marketing activity, human resources management) could provide a more precise picture of *resource-allocation and cost management features of pharmacies as well, which eventually would contribute to the explanation of pharmacies' NP in a more meaningful way.*

3. By the permission of the president of HCP and its regional leaders the official survey data collection was only possible to organise in Budapest, as well as Pest, BAZ, Baranya and

Vas counties. *In order to provide greater levels of reliability, validity and generalisability of results future research have to shift towards probability (random) during the sampling procedure*, although – given sufficient support and organisation – addressing the entire pharmacy population (census) is not entirely impossible, either.

4. Although environmental developments within HPRDS are quite powerful, they by no means appeared or exerted their influence on pharmacies' strategic behaviour instantaneously. Due to the cross-sectional nature of our doctoral research it only provides a snapshot of pharmacies' strategic responses to the (de)liberating regulatory processes occuring in the sector. *Development of strategic awareness and trends in changes of SOs observed within the sector can only be quantified via longitudinal studies. In this case panel research studies – in which the composition of responding pharmacy managers' representative pattern does not change - would be the most expedient*. A similar series of studies could provide a credible picture about how SOs followed by pharmacies and the content elements of these would change and develop due to the consequences of legal changes effecting the sector.

5. *Longitudinal studies* would also be able to expose what kind of a long-term effect changes of environmental conditions and stakeholders' behaviour would exert on pharmacies' SO and BP. Our dissertation had no possibility to examine partial effects of aspects observed in environmental conditions and behaviour of HPRDS' stakeholders. Future research *could eventually quantify exactly which changes contribute most to development and BP of Prospector, Analyser, Defender and Reactor SOs. That way it would be possible to draw more explicit conclusions about PEU's and GL's moderating effect on the relationship between SO and BP.* Such experiences would hugely facilitate sectoral decision makers' efforts in elaborating adequate policies.

6. *After the appearance of horizontal and vertical integration forms functions of ownership and management got separeted* in several segments of the population of domestic pharmacies. Pharmacy managers and co-owners hold a specified share in authority regarding pharmacies' management and responsibility. To ensure higher validity and reliability, but more important, to avoid distortions stemming from CMV *it may be justified to use multiple (e.g. two) respondents-designed questionnaires as means of data collection* in the future.

7. One of the methodological defiencies of our PhD thesis lies in the fact that we only managed to apply 2 of the originally planned 3 extraction techniques aimed at the identification of Prospectors, Analysers, Defenders and Reactors. *Besides the Segev scale and the method of self-typing paragraphs, the method of objective indicators did not contribute to the assignment of pharmacies to SOs.* The reason for this is that pharmacy managers either refrained from responding to the indicators, or otherwise provided distorted, irrealistic data. *During later research indicators operationalising the composition, rate and degree of change in the product and service portfolio have to be developed in cooperation with pharmacists*.

8. *Featuring a 3. measurement instrument would be important beacause it could clarify the classification of pharmacies to SOs*. Knowing the results of 3 different extraction techniques it would be easier to decide which behavourial pattern in environmental adaptation is followed by a given pharmacy. We were unable to decide this clearly in our thesis, as in case of a difference between responses given to either the Segev scale or the

self-typing paragraph method, a 3. measurement instrument was not available. Therefore we performed our quantitative examinations with the Segev scale, trusting it would provide more valid and reliable results due to the „more sporadic" position of M&S's SOs' behavioural characteristics within the questionnaire. *Our decision was backed by it being an internationally tested, valid and reliable measurement instrument exhibiting a confirmatory factor structure*. However *if we manage to identify companies' SO by applying 3 extraction techniques* in the future, more robust conclusions can be made regarding the BP of Prospectors, Analysers, Defenders and Reactors, as well as the moderating effect of PEU and GL.

9. *It might prove valuable to extend our dissertation's geographical focus to other countries within the confines of a future research*. Prolonging effects of European recession, aging societies and less and less sustainable social insurance systems exert a notable fiscal „pressure" on governments. Narrowing the range of drugs subsidised by the state, as well as reduction of the socially inclined financial subvention of their prices automatically necessitate the transformation and „re-regulation" of drug supply system to some extent. However, adapting to unfavorable macro-environmental and sectoral conditions also means new business challenges for pharmacy managers, and developing and following consistent SOs is indispensable for pharmacists in order to achieve an optimal BP. M&S's SOs therefore could be relevant in several countries, *but for instance it is also an interesting research question, that with what content and formal elements they would emerge within drug supply sectors characterised by individual national, industry-specific and cultural attributes.*

10. *Examining strategic behavioural patterns observed in various horizontal and vertical integration forms* may prove as a promising and gap-filling direction of research even in international scientific literature. One interesting question for instance is, to what degree pharmacies participating in chain structures follow identical or differing SOs. Do individual members adopt strategic behavioural patterns of the „headquarter", or is there rather an opportunistic divergence in their environmental adaptation? What consequences could those convergences or divergences possibly exert on the BP of pharmacies? Due to low response willingness of pharmacies taking part in equity-based cooperations we could not hope to approach similar research questions in our thesis. *These questions however are relevant as well as timely both in case of pharmacies participating in strategic cooperations organised by wholesalers and in procurement associations*.

11. Doubts regarding the validity and reliability of SOs' identification can be viewed upon as permanent research challenges. The two extraction techniques applied in our thesis also relied on subjective evaluation of respondents when searching for consistent behavioural patterns in the environmental adaptation of pharmacies. *Considering the items of the Segev scale and the wording of the self-typing paragraph method it is entirely possible that several pharmacists encountered SOs and management behavioural characteristicts of a nature they never had before*.

    Discrepancies between the classification results of the 4 factor Segev scale and the self-typing paragraph method add to our fear that respondents were not entirely aware of individual behavioural aspects' meaning and evaluated their pharmacies' SO in a less conscious and consistent manner. Research conducted within sectors characterised by limited competitive intensity have to take stressed care that response options of their measurement tools do not „force" conscious SOs on respondents who are less prepared in

management skills or do not follow a consistent behavioural pattern. *Thus, it is necessary to develop and apply new measurement instruments (e.g. evaluation by independent sectoral experts, assignment by researchers or method of objective indicators).*

12. Already at the very beginning of data collection process we made notable efforts to make respondents clear that in our questions we are interested in their evaluations regarding the pharmacy's current, i.e. *realised* SO. Yet we were worried about the possibility that when facing the behavioural aspects of M&S's SOs, managers following a less conscious, inconsistent SO would rather share their evaluations regarding a planned SO they *intended* to develop in the future. In order to resolve this dilemma and to handle problems with validity and reliability we yet again recommend the application of further extraction techniques. *Evaluation by independent sectoral experts, assignment by researchers or the method of objective indicators are equally fit to discern whether responding pharmacists formulated their evaluations in respect of intended or realised SOs*.

13. Pharmacy managers are excellent professionals, yet many of them lack strategic knowledge, skills and developed their managerial competences throughout the years in a self-educated way, based on everyday experiences of pharmacy operation. *It is probably largely due to this that at times they provided us with values far-fetched from the reality when determining indicators for pharmacies' effectiveness and profitability*. During future data collections for pharmacies' realistic SAL and NP, researchers might find it useful *to 1) fill questionnaires out via personal interviews and 2) acces BP indicators from profit-and-loss-statements featured in official company registers*. This however could harm respondents' anonymity, and distrust in turn may lead to distorted responses.

14. BP has several dimensions, each of which can be assigned to various qualitative and quantitative „indicators". In a sector characterised by microeconomic attributes of public and private goods, a multitude of BP indicators exist besides SAL and NP that fall into various stakeholders' focus of interest. Theoretical and sectoral relevance of research could be possibly enhanced by *expanding evaluation of BP with dimensions* approaching the role of the pharmacy as a community healthcare provider *(e.g. indicators directed at satisfaction, loyalty, degree of patients' compliance, or even effectiveness of drug therapy).* Integrating indicators motivating producers, wholesalers, physicians, professional advocacies to various degrees may contribute to our complete view of pharmacies' BP.

15. Although methodological conditions were given, due to length limits the dissertation did not examine differences of BP *within* the groups of pharmacies following the same SO. *Differences of BP within SOs are worthy of future attention, as is the exploration of dissimilarities of behavioural characteristics that evoke discrepancies of BP in the groups of Prospectors, Analysers, Defenders and Reactors.*

16. *Defining „best practices" observed within various M&S's SOs*, as well as depicting the behavioural profiles of Prospector, Defender, Analyser and Reactor pharmacies exhibiting the best performance stresses the size limits of a dissertation by itself. A future scientific publication could possibly shed light on the distribution to which pharmacies following either Prospector, Analyser or Defender/Reactor SOs are represented amongst those showing outstanding BP. Furthermore it could be answered, *to what extent successful pharmacies follow either pure SOs or can be viewed as hybrids or mixes of individual M&S's behavioural patterns*.

17. One of our dissertation's methodological defiencies is that the distribution of pharmacy managers' evaluation regarding the Segev scale's behavioural characteristics and items of the PEU scale is not normal. Based on follow-up in-depth interviews with representatives of HPRDS and our personal experiences we presume that the data would not fulfil the conditions of multivariate normal distribution required for structural equation modeling (SEM), even if eventually repeating the survey data collection. *Therefore future reseach have to strive for a larger sample, a handling of missing or extremely outlying data with other techniques, or a more conscious use of „bootstrapping”*.

46. Managerial implications

To demonstrate the practical relevance of the thesis, based on the experiences of our mathematical-statistical analyses *we formulate industry-specific, business-policy suggestions and managerial implications directed at pharmacy managers and sectoral decision-makers*. Strategic-level implications aimed at pharmacists' main interest, namely the improvement of pharmacies' SAL and NP occupy a prominent position among our recommendations.

46.1. Managerial implications concerning the strategic orientations of pharmacies

Based on our results, following a Prospector SO proved to be the most successful within HPRDS. It is important to note, that – even independently from pharmacy managers' PEU and pharmacy's GL – BP of Prospectors proved to be outstanding. *Prevalence of Prospector SO partly „shields” pharmacists less aware of turbulent environmental changes, and negative effects of „getting too comfortable” due to pharmacy managers' relatively low PEU on BP are less strong in their case*. The majority of our empirical experiences made clear that *Prospector SO's positive effect on BP was especially strong in case of rural pharmacies*, which suggests that a consistent and proactive approach – efforts to expand the range of products and services, as well as addressing new patient segments – can be an effective answer to the „demand draining” effect of urban pharmacies and other retail units.

Following the „mix” behavioural pattern of Defender/Reactor SO is not recommended within HPRDS characterised by turbulent changes and heightened competitive intensity. Our research revealed that pharmacies characterised by prevalence of Defender/Reactor SO ecountered a suboptimal BP in regard to the dimensions of both SAL and NP. *According to our experiences PEU in some cases moderated the relationship between Defender/Reactor SO and BP, i.e. „getting too comfortable” due to low PEU often significantly eroded turnover and profitability*. Therefore it is utterly important for Defender/Reactor pharmacies to constantly monitor changes in environmental conditions of pharmacy management and stakeholders' behaviour, and to develop conscious managerial response reactions in order to avoid further decrease in BP.

Defender/Reactors should at least partially abandon their current retreating, risk-minimising business behaviour, and consciously take steps towards a more consistent SO – for instance either Prospector or Analyser. Although this means the partial abandonment of current management approach and practice „entrenched” for many years, but radical regulatory changes and level of competitive intensity experienced in the sectoral transformation condemn them to a suboptimal BP. *This is especially true for rural, but also for urban pharmacies, and the negative consequences caused by the latter's inconsistent behaviour can only be compensated by more favorable conditions of demand only for ever so long*.

Defender/Reactors' lack of a strategic turn may necessitate increasingly frequent state subventions and financial „solidarity" contributions from more succesful pharmacies, which harbors sectoral and social tension. *Pharmacists, sectoral decision-makers and professional associations (e.g. HCP) should play a principal role in facilitating a consistent SO, as well as supporting the acquisition of managerial skills and competences required for this*.

Analysers face a serious challenge, as the turbulent changes of environmental conditions and the behaviour of the pharmaceutical supply chain's stakeholders make the consistent realisation of this SO very difficult. The fact that the prevalence of Analyser SO had no significant effect on SAL and NP proves this. In some cases a decrease in PEU lead to a lessening in Analysers' turnover, yet an increase in profitability. Thus it can be assumed that Analysers' efforts to learn about environmental conditions and predict changes of stakeholders' behaviour did not succeed in increasing turnover, although they resulted in a notable rationalisation on the side of expenses.

As it is evident from above experiences, *intensive environmental monitoring must not deprive resources from explicit managerial decision-making, strategic responsiveness, and the introduction of new practices*. This negative phenomenon is backed by the fact that rural Analyser SOs' BP significantly fell behind from that of their urban counterparts. *„Over-analysing" contingencial conditions was able to worsen Analyser pharmacies' BP especially in the countryside, which spurs pharmacies of small settlements to decisive action, expansion of the range of products and services, and addressing new patient segments based on market research.* Managerial skills and competencies required for the analysis of environmental conditions from a business perspective are less developed, so it is the task of pharmacists and professional associations to play a proactive role in terminating those defiencies.

Based on our dissertation's results *rural pharmacies are not condemned to a suboptimal BP*. Although of course urban pharmacies characterised by a higher population and purchasing power have a higher turnover, we found no notable difference in profitability between urban and rural pharmacies. Thus with a well grounded and consciously implemented SO and consistent tending to accompanying tactical- and operative-level managerial tasks *rural pharmacies can function just as profitably as their urban counterparts.*

Based on the results regarding PEU Prospector, Analyser and Defender/Reactor SOs each can be advised to *stay constantly „alert", and to react to turbulent and unpredictable environmental changes by a proactive approach, decisive product and market innovations and new business applications.* It is expedient for pharmacies to adapt permanently uncertain industrial conditions and to take decisive management measures on their own initiative in order to achieve optimal BP in stead of waiting for external assistance. Development of micro-level managerial skills and competences is required for this, either.

We found no differences of SAL or NP of pharmacies either participating or not taking part in equity-based cooperations (e.g. pharmacy chains). This has to be handled carefully, as only a few pharmacists completed our questionnaire who run several pharmacies or a member-pharmacy of a chain. Despite of this similar horizontal and vertical integration forms did not provide any clear advantages that contributed to optimal BP for the concerned pharmacies. NP of pharmacies participating in pharmacy chains even fell behind that of their peers not taking part in similar cooperations. *Therefore joining such a group can not be explicitly recommended for pharmacicts.* Pharmacies already participating can be advised to strive for a better coordination with sectoral stakeholders, as well as to look for the professional and

managerial balance between the „headquarters" and individual members.

Turnover of pharmacies participating in strategic cooperations organised by wholesalers and procurement associations built from the bottom exceeded that of those who are no members of similar forms of cooperation. *We however found no difference in profitability* between pharmacies taking part in strategic cooperations or procurement associations and their peers not participating in similar forms of cooperation. Our result is somewhat surprising, as based on realisation of procurement discounts we expected that participating in similar forms of cooperation would rather enhance NP of pharmacies.

According to our experiences participation in a strategic cooperation and/or procurement associations is not an undisputed recipe for successful pharmacy-management, either, as tending to tasks consistently complying with the SO had a more meaningful impact on what advantages the pharmacy is able to reap from its membership. Based on the participation's marginal contribution to BP, pharmacists should be advised to mobilise only limited resources and competences on the management of similar cooperations. *Main criteria for a successful cooperation are the disciplined, coordinated management (e.g. in the areas of stock purchase and marketing activities), solidarity of individual members, and cancellation of opportunistic behavioural forms*.

Management of pharmacies' site characteristics require slightly less resources. According to our results prevalence of a consistent SO and socio-demographic characteristics have a larger impact on BP than site attributes. Although initial results from the correlation matrix between site characteristics and BP (Table XCIV) predicted a larger role of these variables, *both our regression and structural analyses showed marginal contribution of site attributes.* Despite of this pedestrian traffic in front of the pharmacy had a positive influence on changes of both SAL and NP, so preference of more frequented areas are still expedient in choosing site location. Also, if financial resources allow for it, it is advised to make patients aware of the pharmacy and its offerings by adequate marketing applications (billboards, decorative show-windows, flashy logo and entrance, localisation-based online marketing tools etc.), thus directing pedestrian traffic towards the pharmacy (Bitner, 1992, Bitner-Meuter, 2000).

From among the socio-demographic characteristics, besides GL's role we have to emphasise total area of space. In our research larger total area of space exerted a significant positive influence on changes of both SAL and NP. Expanding the range of products and services, or addressing new patient segments can lead to an increased demand towards the pharmacy. In order to attractively showcase the continuously expanding portfolio and to serve the increased number of patients – both having a positive influence of BP – more terminals and assistants, also larger spaces are needed, *so that turnover rate can be increased by minimising waiting time and without harming professional and ethical aspects* (Donovan et al., 1994). Also a larger „back office" capacity is required in order to store the more diversified stockpile.

46.2. Connections between the characteristics of strategic-level management and BP

We formulated strategic-level recommendations especially important for pharmacy managers regarding BP in the following structure. *First, from behavioural characteristics connected to respective SOs we selected the ones that contributed to changes in pharmacies' BP in a significant way*. Then, based on our regression analyses compiled from Prospector, Analyser and Defender/Reactor SOs' behavourial characteristics we named those that had a significant positive effect on SAL and NP (Tables CXXII to CXXIII). The correlation matrix found in

Table CXXI shows the connection of M&S's SOs' behavourial characteristics to changes of pharmacies' SAL and NP.

In order to increase turnover it is recommended for *Prospector pharmacies* to continuously expand their portfolio with new products and services, to influence the intensity and nature of competition between nearby pharmacies via intensive marketing activity, and also to proactively react to changes occuring in the professional, market and regulatory environments, interpreting them as opportunities at the same time. *Expansion of the portfolio however must not be careless or self-serving*, and Prospectors also should turn their well-considered attention towards product and service categories that are able to provide them with competitive advanteges and success. This can not only increase their SAL, but also their NP.

All behavioural characteristics of *Defender/Reactor SOs* showed a significant negative relationship with effectiveness and profitability. This also confirms *that managers of Defender/Reactor pharmacies should initiate a strategy altering process, i.e. development of a consistent behavioural adaptation pattern as soon as possible*. Defender/Reactors have to paricularly avoid several BP-damaging behavioural characteristics in order to stop reduction of BP. Therefore Defender/Reactors must not „get stuck" in offering a portfolio consisting of a few conventional products, but rather should try to increase SAL and NP by introducing new product categories and pharmaceutical services. Expansion of their portfolio provides them with an opportunity to address new patient segments, which may help to reduce the negative perspectives regarding BP.

The insignificant influence of the Analyser SO's behavioural characteristics on BP are also demonstrated by Table CXXI. It is evident, that according to our results pharmacies' BP is eroded by the prevalence of the theoretically most Analyser-specific behavioural aspects. Therefore *Analysers also have to take steps towards Prospector-specific behavioural characteristics as much as possible, i.e. they must not be overly careful with expanding their range of products and services.* To develop decisive reactions to turbulent environmental changes they have to be present with their innovations on the market of various patient segments simultaneously with Prospectors, among the first ones and as early as possible.

In Table CXXII we illustrated in a linear regression analysis the effect of M&S SOs' every behavourial characteristic included in the Segev scale on SAL. Based on the results, from among the advisable management behaviour's main characteristics the following stand out (printed in grey): *high quality serving of patients, introduction of product and service innovations, well-considered expansion of product and service portfolio based on potential competitive advantages and strong competitor-orientation*. These are the behavioural characteristics that contribute most to the increase of pharmacies' SAL. Our regression analysis is significant, its explanatory power explained 31% of variance in SAL.

Table CXXIII showcases the results of the regression analysis examining the effect of Prospector, Analyser and Defender/Reactor SOs' behavioural characteristics on NP. As discernible, the insignificant results detailed during earlier stages of our doctoral research make a new appearance here, as statements regarding the product and service portfolio's broad or narrow nature sometimes exerted a counterproductive, inconsistent effect on BP. *At the same time a thoroughly considered expansion of the portfolio that was grounded on potential competitive advantages had also a notable effect on the increase of profitability*. Our suggestion, that *pharmacists should implement their efforts toward expansion of their product and service portfolio in a quick and decisive manner, was confirmed as well.*

As a conclusion it can be stated *that it is definitely expedient for pharmacists to take steps towards the realisation of Prospector behavioural characteristics*. Constant monitoring of opportunities for expanding the range of pharmaceutical products and services, as well as timely introduction of promising novelties is advised. This does not mean pharmacies should be turned into „chandleries", *expansion is only necessary for product categories that comply with local patient needs and preferences, and the resources and competences of the pharmacy*. Solutions supporting the high quality serving of patients, quick implementation of business applications, and interpretation of environmental changes as business opportunities all contribute to an increase in turnover. *Another distinctive feature of successful pharmacies is their strong competitor-orientation*, their willingness to continously track their competitors' supply, and even to influence with their proactive marketing activity the competitive intensity between pharmacies operating in their vicinity.

Pharmacists have to realise that patients can be directed to pharmacies by continously improving the supply of products and services. In the category of OTC drugs and other products pharmacies have encountered a multitude of retail competitors, *against which a retreating, defensive behaviour yields no results, and competition with other channels offering healthcare products must indeed be embraced by integrating new product categories*. This requires opening of new markets, addressing new patient segments, and a positioning that consciously influence their behaviour. It is our explicit vision, that the introduction and marketing of innovations could be enhanced if offering novelties was accompanied by *additional services with high added values (e.g. pharmacist's care) and performed by skilled employees* within the pharmacies, which would simultaneously help in reaching patients and maintaining their loyalty (Prahalad-Ramaswamy, 2004).

47. References

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48. Tables

Table II: Strategy-matrix: The breakdown of the concept of strategy

STRATEGY	Process	Content
Idea, Concept	Formulation of intended strategy (*strategic planning, goals and objectives)*	Intended strategy *(„ex ante" plans, goals and objectives, competitive tools, positions to be achieved)*
Act	Development of realised strategy *(strategy implementatation and execution, strategic-level management)*	Realised strategy *(„ex post"behavioural pattern, structures, positions and business performance)*

Source: Antal-Mokos, 1993

Table III: Research streams regarding content elements of strategy

CONTENT ASPECTS OF STRATEGY	Individual factors	Clusters of factors
Static conditions	Fitting a concrete corporate strategy to certain conditions *(e.g. international expansion: restrictions of governmental authorities of target market's country pertaining to institutional modes of entry*	Outlining the relationships between strategic groups and clusters of numerous external as well as internal factors *(e.g. the prevalence of Porter's strategic orientations and their realised organisational configuration in given industries)*
Dynamic conditions	Concrete strategic responses given to changes in the conditions of external and internal environments *(e.g. reactons of manufacturing companies in response to oil-price boom)*	Longitudinal tracking the development of strategic orientations and clusters of factors and conditions *(e.g. strategic transitions in parallel to changes of industry life-cycles)*

Source: Hortoványi et al., 2006

Table IV: The main idiosyncratic characteristics of Miles and Snow's strategic orientations

Stages of the Adaptive Cycle	Dimensions	Solutions proposed by the strategic orientations of Miles&Snow			
		PROSPECTORS	**DEFENDERS**	**ANALYSERS**	**REACTORS**
Entrepreneurial Problem	Main question	How to continuously locate and exploit new market opportunities?	How to maintain a stable market share where we can supply our consumers with conventional products?	How to locate and exploit new product/market opportunities while maintaining our position in existing conventional product/market segments?	How to choose a „clear" product/market area of operation that matches the resources and abilities of our organisation?
	Product/market domain of operation	Wide and always expanding	Stable, narrow and appropriately focused	Wide and well segmented	Badly defined, not structured, uneven and temporary
	Way of achieving the successful vision	Proactive approach, actively initiating changes	Obtaining and maintaining the dominant position in a few product/market segments	Cautious and calculated following of the changes in market environment and product innovation	Opportunistic developments and imitative efforts
	Market research	Aggressive, aiming to promote and as well to follow changes in the market environment	Powerful monitoring to acquire better understanding of a chosen product/market segment	Competitor-oriented and very thorough	Sporadic, related to single projects or areas that are thought to be emphasised
	Growth	Becoming a pioneer in product/market developments and diversification	Cautious penetration and technologial benefits	Pushfull followers of the successful product/market innovations	Imprudent changes concerning the product/market and operation domains
Advantages and disadvantages of strategic orientations regarding the Entreprenurial Problem		Product innovation protects the organisation from the constantly changing conditions of the environment and it provides a strong market effectiveness. On the other hand the risks are higher, profitability is lower, and the resources are "overextended".	It's hard to move the company out of its stable product/market position. Resulting from inflexibility a radical change in the market can jeopardise the survival of the company.	Less resources invested in product development, conscious following of promising innovations and minimising risks. The organisation is under constant threat because of the search for the optimal balance between stable and developing markets.	Significant potential and ability to change. Badly defined and poorly circumscribed products and target market segments.
Engineering Problem	Main Question	How to avoid long-term commitment during a dominant technological procedure?	How can we plan our production and sales processes in the most cost-efficient way?	How to maintain efficiency in our conventional markets, while also ensuring the technological flexibility required in our new product/market segments?	How to cease „technological wandering" and how to determine production and distribution processes that ensure effective and efficient operation of the organisation?
	Technological goal	Flexibility and innovation	Cost-Efficiency	Dual technology installation and synergy	Ad-hoc developments related to projects
	Technological possibilities	The development, application and takeover of diverse, usually high-tech technologies	A focused core technology and the development of related skills and expertise	Interconnected technologies that are generally of high quality.	Often „volatile" technological applications that are constantly „on the move"
	Technological	Engineering	Standardisation,	Incremental	„Experimenter „skills

	advantages	personnel with diverse competencies	specialisation, process control	developments and synergy	
Advantages and disadvantages of strategic orientations regarding the Engineering Problem		Technological flexibility can ensure effective reaction to market trends. On the other hand diverse technologies are not able to yield maximum efficiency in production and distribution.	Technological efficiency ensure outstanding organisational profitability. Although it boosts efficiency, it requires serious investments in order to sustain technological „superiority" on the long run.	A dual technological profile is able to serve the needs of both stable and variable markets. However it will never be completely efficient or effective.	Significant flexibility due to low commitment and low resource exposure. Inappropriate, badly developed or adapted technology with low efficiency.
Administrative Problem	Main Question	How to support and facilitate the coordination of the diverse operations?	What methods can we use to maintain strict control over our organisational processes in order to sustain maximum efficiency in operation?	How to differentiate and operate the organisation's dual structure and its processes in order to suit the criteria of both our stable and dynamic markets?	How to create well defined responsibilities and authorities in order to have sufficient control over our processes of operation?
	Dominant coalition and functional background	Marketing and R&D	Finance and production management	Strategy and planning	Opportunistic „mischievous" entrepreneurs
	Planning characteristics	Goal and task oriented, a project approach aimed at solving problems and finding opportunities	From the inside out, mainly related to the control of production and distribution channels	Comprehensive, focusing on incremental changes	Not coordinated and usually crisis related
	Organisational structure	Product or market oriented, divisional	Functional, linear „authority"	Staff dominated, matrix oriented	Mixed: strong, formal authority or Loose: less hierarchic operating design
	Control and performance evaluation	Based on market performance (sales, market share)	Centralised and formal, mainly based on financial and accounting indicators	Multiple methods: risk calculations, market results, financial profitability liquidity etc.	Unclear or erroneous evaluation procedures, avoiding problem solving
Advantages and disadvantages of strategic orientations regarding the Administrative Problem		The administrative system is ideal for maintaining flexibility and efficiency. Although it can mismanage resources and misuse capabilities.	The administrative system perfectly suits the needs to serve the stable product/market segment. However due to it's inflexibility the system is incapable of reallocating the appropriate resources in order to respond to new arising market opportunities.	The administrative system is suited to balance stability and flexibility. However if this balance is lost, it will be difficult to restore the equilibrium due to the dual production and distribution profiles.	The administrative structure can be easily transformed. Unclear roles and responsibilities, Too high or unreasonably low number of inspections, Badly organized or not-at-all organized administration

Source: Table made by the author based on Miles et al. (1978a, 1978b, 1984)

Table V: Thematic classification of researches regarding strategic typology of M&S

Research areas	Studies
Profile depicting and profile extending	Akbolat (2009), Andrews et al. (2006), Bednall-Valos (2005), Beekun-Ginn (1993), Conant et al. (1990), Croteau et al. (1999), Croteau-Bergeron (2001), Davig (1986), Desarbo et al. (2006), Dvir et al. (1993), Garrigós-Simon et al. (2005), Ghobadian et al. (1998), Ghobadian-O'Reagan (2005), Ghobadian-O'Reagan (2006a), Ghobadian-O'Reagan (2006b), Hambrick (1981), Hambrick (1982), Hambrick (1983a), Helmig et al. (2014), Kabanoff-Brown (2008), Laugen et al. (2006), Lopes et al. (2010), Matsuno-Mentzer (2000), Miles – Snow (1978), Miles et al. (1978), McDaniel-Kolari (1987), Olson et al. (2005), Pleshko et al. (1995), Schenk (1994), Segev (1987), Shoham et al. (2002), Shortell-Zajac (1990), Slater-Narver (1993), Slater-Olson (2000), Slater-Olson (2001), Snow-Hrebiniak (1980), Song et al. (2007), Veliyath-Shortell (1993), Vorhies-Morgan (2003)
External environmental adaptation	Aragón-Sanchez – Sanchez-Marín (2005), Andrews et al. (2009), Bastian-Muchlish (2012), Beekun-Ginn (1993), Brunk (2003), Chaganti (1987), Dvir et al. (1993), Desarbo et al. (2005), Desarbo et al. (2006), Forte et al. (2000), Fox-Wolfgramm et al. (1998), Gimenez (2000), Ghobadian et al. (1998), Ghobadian-O'Reagan (2005), Ghobadian-O'Reagan (2006a), Hambrick (1982), Hambrick (1983a), Hambrick (1983b), Hawes-Crittenden (1984), Hoque (2004), Jusoh-Parnell (2008), Köseoglu et al. (2013), Lin et al. (2014), Matsuno-Mentzer (2000), McKee et al. (1989), Meyer (1982), Miles-Snow (1978), Moore (2005), Oosthuizen (1997), Parnell et al. (2000), Parnell et al. (2012), Peng et al. (2004), Pinto-Curto (2007), Segev (1987), Smith et al. (1989), Snow-Hrebiniak (1980), Zahra-Covin (1993)
Strategy implementation – internal environmental fit	Aragón-Sanchez – Sanchez-Marín (2005), Andrews et al. (2006), Abernethy-Guthrie (1994), Andrews et al. (2009), Bednall-Valos (2005), Brunk (2003), Croteau et al. (1999), Croteau-Bergeron (2001), Desarbo et al. (2005), Dyer-Song (1997), Evans-Green (2000), Forte et al. (2000), Hambrick (1981), Hambrick (1982), Jusoh-Parnell (2008), Kabanoff-Brown (2008), Lin et al. (2014), Miles-Snow (1984), Olson-Currie (1992), Olson et al. (2005), Pearce et al. (1987), Peng et al. (2004), Pinto-Curto (2007), Pittino-Visintin (2009), Pleshko-Nickerson (2008), Ruekert-Walker (1987), Schenk (1994), Slater-Olson (2000), Slater-Olson (2001), Song et al. (2007), Thomas et al. (1991), Veliyath-Shortell (1993), Vorhies-Morgan (2003), Zahra-Covin (1993)
Methodology and/or review	Conant et al. (1990), Desarbo et al. (2006), Hambrick (1980), Hambrick (2003), Helmig et al. (2014), James-Hatten (1995), Malik-Naeem (2011), Moore (2005), Snow-Hambrick (1980), Segev (1989), Shortell-Zajac (1990), Walker-Ruekert (1987), Zahra-Pierce (1990)

Source: Table made by the author

Table VI: Business performance indicators applied in M&S strategic research

Study	Effectiveness	Efficiency	Adaptability	Innovativity
Abernethy-Guthrie (1994)	Sales revenue and market share	Operating cash flow, profit, cost control and return on investments	Government and public relations	Market development and manpower development
Akbolat (2009)	N/A	Hospital bed occupancy rate and number of physicians per hospital bed	N/A	N/A
Andrews et al. (2006)	Comprehensive Performance Assessment index developed for the evaluation of British public service providers, which is derived from the CSP (Core Service Performance) indicator produced from a number of service quality and financial indicators			
Aragón-Sanchez – Sanchez-Marín (2005)	N/A	ROI and workforce productivity	Knowledge and experience in the business unit, ability to produce quality products, capacity required for the development of new products and processes, and environmental responsibility	Knowledge and experience in the business unit, ability to produce quality products, and capacity required for the development of new products and processes
Bastian-Muchlish (2012)	N/A	Asking about profitability with 1. specific objective indicators and 2. subjective evaluation of performance by managers	N/A	N/A
Chaganti (1987)	N/A	Return on Assets (ROA)	N/A	N/A
Conant et al. (1990)	N/A	Overall profitability and ROI	N/A	N/A
Croteau et al. (1999)	Growth rate of sales revenue	Overall profitability	N/A	N/A
Croteau-Bergeron (2001)	Growth rate of sales revenue	Overall profitability	N/A	N/A
Davig (1986)	Percentage change in sales revenue	Percentage change in profit rates	N/A	N/A
Desarbo et al. (2005)	Relative market share, change in sales revenue (%) and sales revenue realised compared to the set objectives	Net profit, ROA, ROI, ROIPEC (average rate of return on invested capital in the past 3 fiscal years), development of ROI compared to the set objectives and average margin	Average customer-retention rate, retention of key accounts	N/A
Desarbo et al. (2006)	N/A	Overall profitability and ROI	N/A	N/A
Dvir et al. (1993)	Number of Orders generated in the short run	Profitability and overall level of achievement of financial goals	Creation of new business opportunities in the long run	Existence of scientific and technological capabilities required for long-term prosperity
Dyer-Song (1997)	Aggregate subjective market performance compared to main competitors as well as the satisfaction of the various functional units with each other and their commitment to each other	N/A	N/A	N/A
Evans-Green (2000)	N/A	Return on Sales (ROS), Indebtedness Ratio, Bank Debt/Total Debt, Equity/Debt Capital, Total Equity	N/A	N/A
Forte et al. (2000)	N/A	Total net profit, operating profit, income per "sick" day, operating income to hospital beds ratio and hospital bed occupancy rate	N/A	N/A
Garrigós-Simon et al. (2005)	Growth rate of sales revenue, market share, market/book value of shares and staisfaction of customers employees and evaluation of	ROA, ROI and ROS	Success in market introduction of new products	N/A

	competitive position			
Gimenez (2000)	Sales trends (%) in past 5 years Change in the number of employees in the past five years (%)	N/A	N/A	N/A
Ghobadian-O'Reagan (2005)	N/A	N/A	Market introduction of new products, modification of existing products and adoption of new technologies	Development and introduction of new technologies and number of patented products
Ghobadian-O'Reagan (2006)	Market share	Overall financial performance	Evaluation of long- and short-term performance	Subjective evaluation of overall innovation performance
Hambrick (1981)	Number of students enrolled in college, patients treated and insurance customers	N/A	N/A	N/A
Hambrick (1983a)	Change in market share (%)	ROI and CFOI	N/A	N/A
Hambrick (1983b)	Market share and achievement of objectives relating to market position	ROI	N/A	Quality and technological modernity
Hawes-Crittenden (1984)	Change in sales revenues (%)	Changes in margins and net profit (%)	N/A	N/A
Helmig et al. (2014)	Standard of patient care, quality of processes, overall success, annual revenue, change (%) in annual revenue	Overall financial performance and hospital bed occupancy rate	N/A	N/A
Hoque (2004)	Sales revenue, market share, employee health and workplace safety	Operating cash flow, profit, cost control and return on investments	Government and public relations	Market development, manpower development and R&D expenditures
James-Hatten (1995)	N/A	Average financial leverage, average net interest margin, ROA and ROE	Number of defaulting loans	N/A
Jusoh-Parnell (2008)	Product and service quality, reliability of delivery, market share and growth rate of sales revenue	Productivity, cost control, operating profit, cash flow and ROI	N/A	Development of new products, R&D expenditures and manpower development
Kabanoff-Brown (2008)	N/A	ROA, ROE, share price/earnings per share (EPS)	N/A	N/A
Lin et al. (2014)	N/A	ROIC, ratio of costs allocated for production and operation to total sales (COGS), and sales to marketing cost ratio	N/A	R&D expenditures
Matsuno-Mentzer (2000)	Change in market share and sales revenue (%)	ROI	Share of sales of new products in sales revenues (%)	N/A
McKee et al. (1989)	Change in market share (%)	ROA and ROE	N/A	N/A
Meier et al. (2007)	Proportion of students having successfully passed Texas Assessment of Academic Skills and proportion of students admitted from secondary schools to institutes of higher education	N/A	N/A	N/A
Meyer (1982)	Revenue of hospital and number of patients	Hospital bed occupancy rate	Number of dismissed employees (physicians and nurses) and introduction of new services	N/A
Miles-Snow (1978a)	Overall corporate business performance	Miles and Snow (1978a)	Overall corporate business performance	Miles and Snow (1978a)
Miles et al. (1978b)	Overall corporate business performance	Miles at al. (1978b)	Overall corporate business performance	Miles at al. (1978b)
Olson et al. (2005)	Overall performance evaluation by managers: To what extent overall business performance of the company met the requirements and how it developed relative to main competitors and to what extent top management was satisfied with that?			
Oosthuizen (1997)	Subjective evaluation of sales volume and market	Subjective evaluation of net profit, ROI and cash flow	N/A	N/A

	share relative to competitors	relative to competitors		
Parnell-Wright (1993)	Sales revenue and its annual growth rate (%)	ROA and its annual growth rate (%)	N/A	N/A
Parnell et al. (2000)	N/A	ROA	N/A	N/A
Pearce et al. (1987)	Objective and subjective sales revenue, change in sales revenue (%) and overall performance	Objective and subjective ROA and ROS and overall performance	N/A	N/A
Pinto-Curto (2007)	N/A	Return on Investment (ROI)	N/A	N/A
Pleshko-Nickerson (2008)	Market share relative to the potential in the company and growth rate of market share (%)	The profitability of the company relative to its opportunities and growth rate of its profitability (%)	Adaptation to changing environmental conditions, measures taken by competitors and customer requirements	N/A
Rajagopalan (1997)	Increase in share prices	ROCE	N/A	N/A
Segev (1987)	Market share and sales revenue	Gross profit/sales, net profit/sales, ROA, ROE and share price	N/A	N/A
Segev (1989)	Growth in market share and sales revenue	Debt/Equity, long-term financial stability, profitability, operational efficiency and liquidity	N/A	Quality
Sharma-Vredenburg (1998)	N/A	N/A	Subjective evaluation of environmental performance dimensions characteristic to the oil and gas industry	
Shoham et al. (2002)	Objective: Export sales revenue to total sales revenue ratio, Subjective: overall business performance perceived by managers	Subjective: overall business performance perceived by managers	Subjective: overall business performance perceived by managers	Subjective: overall business performance perceived by managers
Short et al. (2007)	Tobin's Q ratio (cc. market value)	Tobin's Q ratio (cc. market value) and ROA	Altman's Z score (propensity for bankruptcy)	N/A
Shortell-Zajac (1989)	N/A	N/A	Introduction of new services, entry into new markets/customer segments and share of services in growth stage from total sales	Implementation of innovative strategic planning process
Slater-Narver (1993)	N/A	ROA	N/A	N/A
Slater-Olson (2000)	Market share and growth rate of sales compared to main competitors and to the set objectives	Profitability compared to main competitor and to the set objectives	N/A	N/A
Slater-Olson (2001)	Sales revenue and market share	ROI	N/A	N/A
Smith et al. (1989)	Growth in sales revenue and overall performance based on managerial assessment	ROA, ROS and overall performance based on managerial assessment	N/A	N/A
Snow-Hrebiniak (1980)	N/A	Total revenue/Total assets (cc. ROA)	N/A	N/A
Talpová (2012)	Subjective evaluation of overall market performance	Subjective and objective ROA and ROS	N/A	N/A
Tan (2002)	N/A	Overall profitability rate	N/A	N/A
Tan-Litschert (1994)	Sales revenue and overall market performance	Profit	N/A	N/A
Thomas et al. (1991)	Market share	ROI	N/A	N/A
Thomas-Ramaswamy (1996)	N/A	ROS, ROA and ROE	N/A	N/A
Veliyath-Shortell (1993)	N/A	Profit (cc. EBIT)	N/A	N/A
Vorhies-Morgan (2003)	Change in sales revenue and market share (%) and achievement of goals relating to market position	Ratio of marketing and sales expenditures to net operating profit of the company	Ratio of marketing and sales expenditures to net operating profit of the company	N/A
Woodside et al. (1999)	Customer satisfaction	ROI and profit	N/A	N/A

Source: Table made by the author

VII. Table: The distribution of the M&S's strategic orientations in the academic studies

Study	Sample size	Prospectors	Analysers	Defenders	Reactors
Abernethy-Guthrie (1994)	49	The exact distribution is unknown	Not examined	The exact distribution is unknown	Not examined
Akbolat (2009)	157	38 (24,20%)	49 (31,21%)	49 (31,21%)	21 (13,38)
Andrews et al. (2006)	119	The exact distribution is unknown, but they are significantly more than Reactors and slightly less than Defenders	Not examined	The exact distribution is unknown, but Defender strategic orientation represents the relative majority, Prospectors follow them, while Reactors are the significant minority.	
Andrews et al. (2009)	90 organizations' 237 representatives 62 organisations' 215 representatives		Not examined	The exact distribution is unknown, but Defender strategic orientation represents the relative majority, Prospectors follow them, and Reactors are the significant minority.	
Aragón-Sanchez – Sancez-Marín (2005)	Production: 735 Construction industry: 166 Services: 338	209 21 72	305 68 133	221 77 133	Not examined
Bastian-Muchlish (2012)	86	The exact distribution is unknown	Not examined	The exact distribution is unknown	Not examined
Brunk (2003)	2	1 (MAGlobal)	1 (Tech Data)	Not examined	Not examined
Bednall-Valos (2006)	241	The distribution of Prospectors, Analysers, Defenders and Reactors is not quantified in the study.			
Conant et al. (1990) Two different methods	148 141	30 (20%) 35 (25%)	61 (41%) 46 (33%)	48 (32%) 56 (39%)	9 (7%) 4 (3%)
Croteau et al. (1999)	301	The distribution of Prospectors, Analysers, Defenders and Reactors is unknown, yet the study only investigates effects of characteristics of startegic orientations operationalised via multi-item scale			
Croteau-Bergeron (2001)	243	The distribution of Prospectors, Analysers, Defenders and Reactors is unknown because the study only investigates the effects of behavioural characteristics of startegic orientations operationalised via multi-item scale, but the sequence is known: The Analysers are the relative majority, Prospectors and the Defenders follow them, finally the minority of the Reactors can be noticed.			
DeSarbo et al. (2005)	709	234 (33%)	220 (31%)	168 (24%)	87 (12%)
DeSarbo et al. (2006)	216	62 (29%)	79 (37%)	59 (27%)	16 (7%)
Di Benedetto-Song (2003)	245	83 (34%)	76 (31%)	51 (21%)	35 (14%)
Dvir et al. (1993)	76	24 (32%)	32 (42%)	19 (25%)	1 (1%)
Dyer-Song (1997)	943	The distribution of Prospectors, Analysers, Defenders and Reactors is unknown.			
Evans-Green (2000)	97	28 (29%)	Not examined	24 (25%)	45 (47%)
Forte et al. (2000)	Before external shock: 235 After external shock: 226	17 (7%) 48 (21%)	63 (27%) 67 (30%)	50 (21%) 49 (21%)	105 (45%) 62 (28%)
Garrigós-Simon et al. (2005)	194	39 (20%)	52 (27%)	85 (44%)	18 (9%)
Gimenez (2000)	108 42	24 11	48 13	16 6	20 12
Ghobadian-O'Reagan (2005)	188	92 (49%)	87 (46%)	9 (5%)	Not examined
Ghobadian-O'Reagan (2006)	194	93 (47,4%)	86 (44,8%)	10 (5,2%)	6 (2,6%)
Hambrick (1981)	29 33 15	4 (14%) 3 (9%) 3 (20%)	No data	4 (14%) 3 (9%) 3 (20%)	No data
Hambrick	165	75 (45%)	Not examined	90 (55%)	Not examined

(1982)					
Hambrick (1983)	Growing/Not innovative. 84 Growing/innovative. 119 Mature/not innovative. 456 Mature /Innov. 191	25 (30%) 66 (55%) 31 (6%) 79 (41%)	Not examined	59 (70%) 53 (45%) 425 (94%) 112 (59%)	Not examined
Hawes-Crittenden (1984)	182	43 (24%)	Not examined	47 (26%)	35 (19%) + companies not distributing private label brands: 125 (31%)
Helmig et al. (2014)	178	Prospectors 5 Prosp/Anal: 20	Defenders:18, Analysers: 40 Defenders/Analysers: 37		Reactors: 27 Not able to decide: 26
Hoque (2004)	52	The exact distribution is unknown, but the sample is dominated by the behavioural aspects of Prospector strategic orientation.		Not examined	Not examined
James-Hatten (1995)	408	108 (26%)	143 (35%)	139 (34%)	18 (5%)
Jusoh-Parnell (2008)	120	23 (20%)	81 (67,5%)	5 (4,1%)	Reactors: 1 (0,83%) „not exactly determined": 10 (8,3%)
Kabanoff-Brown (2008)	460	The distribution of the strategic orientations is unknown.			
Köseoglu et al. (2013)	214	87 (40,6%)	26 (12,1%)	76 (35,6%)	25 (11,7%)
Laugen et al. (2006)	42	8 (19%)	27 (64%)	7 (17%)	Nem vizsgálták
Lin et al. (2014)	35	The exact distribution of Prospectors, Analysers, Defenders and Reactors is unknown.			
Lopes et al. (2010)	56	10 (17,9%)	25 (44,6%)	14 (25%)	7 (12,5%)
Matsuno-Menzter (2000)	364	133 (36%)	130 (35%)	77 (22%)	18 (5%) + 2% N.A.
McDaniel-Kolari (1987)	279	67 (24%)	155 (55%)	57 (21%)	Not examined
McKee et al. (1989)	333	54 (16%)	87 (26%)	157 (47%)	31 (11%)
Meier et al. (2007)	500+	The exact distribution is unknown	Not examined	The exact distribution is unknown	The exact distribution is unknown
Meyer (1982)	3	1 (33%)	1 (33%)	1 (33%)	0
Miles et al. (1978)	4	1 (25%)	1 (25%)	1 (25%)	1 (25%)
Miles-Snow (1984)	3	1 (33%)	1 (33%)	1 (33%)	Not examined
Moore (2005)	101	The distribution of Prospectors, Analysers, Defenders and Reactors is unknown.			
Olson-Currie (1992)	40	8 (20%)	8 (20%)	16 (40%)	3 (8%), no data from 5 companies
Olson et al. (2005)	216	63 (29%)	45 (21%)	108 (50%) (Low-cost and Differentiated all togheter)	Not examined
Oosthuizen (1997)	211	High PEU: 36% Low PEU: 17%	high PEU: 33% low PEU: 39%	high PEU: 28% low PEU: 42%	high PEU: 3% low PEU: 2%
		The absolute numbers of Prospectors, Analysers, Defenders and Reactors is unknown.			
Parnell-Wright (1993)	104	38 (37%)	31 (30%)	16 (15%)	19 (18%)
Parnell et al. (2000)	137	28 (20%)	Analysers: 32 (23,4%) „Balancers":17 (12,4%)	26 (19%)	34 (25%)
Pinto-Curto (2007)	53	12 (23%)	19 (36%)	20 (37%)	2 (4%)
Pittino-Visintin (2009)	141	31 (22%)	35 (25%)	44 (31%)	31 (22%)

Pleshko-Nickerson (2008)	133	35 (26%)	35 (26%)	39 (29%)	24 (18%)
Pleshko et al. (1995)	125	The distribution of the strategic orientations is unknown.			
Rajagopalan (1997)	50	14 (28%)	Analysers were not found	20 (40%)	16 (32%)
Ruekert-Walker (1987)	3	1 (33%)	1 (33%)	1 (33%)	Not examined
Sharma-Vredenburg (1998)	7	2 (28,5%)	Analysers were not found	Defenders were not found	5 (71,5%)
Shimizu-Tamura (2012)	99	16 (16%)	44 (45%)	21 (22%)	18 (18%)
Shoham et al. (2002)	171	73 (43%)	30 (17%)	58 (34%)	10 (6%)
Shortell-Zajac (1990)	447 407	95 (22%) 104 (27%)	321 (71%) 268 (65%)	31 (7%) 35 (8%)	Not examined
Sim-Teoh (1997)	Malaysia: 52 and Singapore: 40 and 30 Australia: 44 and 33	Malaysia: 18 (34,6%) and 18 (41%) Singapore: 14 (35%) and 12 (40%) Australia: 29 (65,9%) and 26 (78,78%)	Malaysia: 18 (34,6%) and 17 (38,6%) Singapore: 15 (37,5%) and 8 (26,7%) AUS: not found	Malaysia: 16 (31%) and 9 (17,6%) Singapore: 11 (27,5%) and 9 (30%) Australia: 15 (34%) and 7 (21%)	Not examined
Slater-Narver (1993)	140	33 (23%)	56 (40%)	21 (15%)	30 (22%)
Slater-Olson (2000)	278	91 (33%)	41 (15%)	130 (47%) (Low-cost and Differentiated togheter)	14 (5%)
Slater-Olson (2001)	208	52 (25%)	68 (33%)	88 (42%) (Low-cost and Differentiated togheter)	Not examined
Olson et al. (2005)	380	125 (33%)	93 (25%)	135 (35%) (Low-cost and Differentiated togheter)	27 (7%)
Smith et al. (1989)	45	11 (25%)	19 (42%)	10 (22%)	5 (11%)
Snow – Hrebiniak (1980)	High uncertainty: 165 Low uncertainty: 82	49 (30%) 26 (31%)	14 (8%) 13 (15%)	58 (35%) 22 (27%)	39 (23%) and 9 (4%) not ex. 15 (18%) and 6 (8%) not ex.
Song et al. (2007)	216	62 (29%)	79 (37%)	59 (27%)	16 (7%)
Talpová (2012)	118	19 (16,1%)	46 (39%)	45 (38,1%)	8 (6,8%)
Tan (2002)	56	Distribution of Prospectors, Analysers, Defenders is unknown, yet the correlations of the behavioural characteristics of strategic orientations were examined separately.			Not examined
Tan-Litschert (1994)	Not known	Distribution of Prospectors, Analysers, Defenders is unknown, yet the correlations of the behavioural characteristics of strategic orientations were examined separately.			Not examined
Tayaouva (2011)	114	61 (53,5%)	26 (22,8%)	27 (23,7%)	Not examined
Thomas et al. (1991)	112	56 (50%)	Not examined	56 (50%)	Not examined
Thomas-Ramaswamy (1996)	269	135 (50%)	Not examined	134 (50%)	Not examined
Veliyath – Shortell (1993)	139	104 (75%)	Not examined	35 (25%)	Not examined
Vorhies-Morgan (2003)	186	45 (24%)	64 (34%)	77 (42%)	Not examined
Woodside et al. (1999)	93	21 (22,5%)	19 (20,4%)	31 (33%)	Reactors: 15 „Ambiguous”: 7
Zinn et al. (2008)	724	137 (19%)	239 (33%)	311 (43%)	48 (6,6%)

Source: Table made by the author

Table VIII: Industries and their environmental characteristics examined in M&S research

Study	Industry	Industry-specific characteristics
Abernethy-Guthrie (1994)	2 big Australia-based multinational corporations operating 49 strategic business units in various industries: construction, car part manufacturing, tire manufacturing, steel-making, clothing, health services, semiconductor and cable manufacturing, food processing and packaging	Rather heterogeneous environmental conditions, diverse industrial branches
Akbolat (2009)	165 public and private hospitals in Turkey	Dinamically developing sector, the increase in demand exceeds the expansion of capacities
Andrews et al. (2006)	152 organisational units of Wales local governments operating in varios sectors of public services	Changed environmental condition system: the state expects rational management and transparent financial planning from local governments Service industries characterised by heterogeneous environmental conditions: education, management of public roads, waste management, law enforcement, culture, social housing, social care
Andrews et al. (2009)	A total of 1245 senior representatives of 119 organisational units of English local governments providing public services	Changed environmental condition system: the state expects rational management and transparent financial planning from local governments Service industries characterised by heterogeneous environmental conditions: education, management of public roads, waste management, law enforcement, culture, social housing, social care
Aragón-Sanchez – Sanchez-Marín (2005)	Spanish small and medium sized construction and services companies	A sample consisting of the small and medium-sized companies of three broad industries that can be described as having rather heterogeneous environmental conditions (production, service and construction). No direct impact of explicit environmental conditions were examined.
Bastian-Muchlish (2012)	West Java and Banten provines' (Indonesia) largest manufacturing corporations with 86 managers interviewed.	Turbulently changing political, market, natural, socio-cultural and international environments
Boyne-Walker (2004)	Organisational units of public services companies of the USA	Changed system of environmental conditions: Managers demanded strategic planning from the federal government, and the performance had to be systematically accounted for.
Brunk (2003)	1 Fortune TOP 100 (Tech Data) corporation and an emerging foreign trade company (MAGlobal)	The two companies have different fields of operations and face different environmental conditions. TechData: a global distributor of hardware, software and IT systems MAGlobal: a start-up that deals with importing of premium African products to the USA
Bourgeois (1980b)	12 production and service companies from the Northwestern states of the USA.	12 industries that can be described by fairly different traits. They operate in different sectors (production, service, high-tech). No examination of explicit variables were made.
Chaganti (1987)	Small and middle-sized companies operating in Canada's Saskachewan province, whose companies mainly produce wood products, furniture, printing industry products, construction industry products and processed food products	Sectors and their products in different stages of industry and product life cycles
Conant et al. (1990)	Health Maintenance Organisations	An industry in the early growth stage
Croteau et al. (1999)	CEOs of 301 Canadian corporations	Companies with rather heterogeneous environmental conditions which operate in various industries
Croteau et al. (2001)	243 Canadian corporations with structures information systems and strategies, which have interests in at least 2 industries	Companies operating in rather heterogeneous environmental conditions, mainly in the secondary and the financial services sector.
Davig (1986)	3 companies in industries exhibiting rather similar structures from 3 US states (clothing accessories, iron casting and iron product manufacturing)	Fragmented, mature industries that can be described as having very intense competition, and consist of a large number of small and

		medium-sized companies.
Desarbo et al. (2005)	Exceptionally wide, heterogeneous sample mainly consisting of American, Japanese and Chinese production companies – medicines, consumer electronics, telecommunications devices, semiconductors, IT, machinery manufacturing	Uncertainties of the market and the competitive environments, and the various industries of countries with different cultures.
Desarbo et al. (2006)	A total of 216 SBUs of American corporations	Industrial sectors with rather heterogeneous environmental conditions: hardware and software production, electronic equipments, household appliances, medicine, telecommunications, industrial equipment, chemicals, air conditioners, vehicles
Di Benedetto-Song (2003)	245 Chinese manufacturing companies from the following industries: hardware, electronic devices and household appliances, medicine, machinery and industrial equipment, telecommunication, transport, manufacture of air conditioning devices	Diverse branches with rather heterogeneous environmental conditions, but the turbulent nature of emerging markets is predominant.
Dvir et al. (1993)	Computing and miscellaneous barches of electronics	High-tech branches that can be described with dynamic growth, but unpredictable cyclicity
Dyer-Song (1997)	American and Japanese companies producing mostly consumer electronics. Most of them are listed on the stock exchange	Companies listed on the stock exchange that are facing recession
Evans-Green (2000)	97 small and middle-sized businesses in Georgia stage (USA) Sectors: manufacturing, wholesale, food industry, recreation, services	Industries that can be described as having rather heterogeneous environmental conditions, but all companies in the study went bankrupt
Forte et al. (2000)	Hospitals in Florida	Facing a drastic environmental shock (New Medicare payment system)
Garrigós-Simon et al. (2005)	189 Spanish catering businesses	Spanish tourism industry can be described as having a balanced growth
Gimenez (2000)	Brazil: Small and medium-sized businesses from one developed southern, and one less developed northern province (wood and furniture industry, supermarkets, clothing, food industry, tourism, metallurgy, metal processing, etc.)	Small and medium-sized firms of heterogeneous industries of one dynamically growing and one slower growing province.
Ghobadian et al. (1998)	Regional electricity providers of England and Wales	With the lowering of the entry barriers and the loosening of the regulation mechanisms, competitive intensity increased significantly.
O'Reagan-Ghobadian (2005)	194 British small and medium-sized companies from branches of industrial equipment and electronic appliance manufacturing	Industrial equipment: low growth, mild innovation, mature market Electronic appliances: high growth, constant innovation, immature market
Ghobadian-O'Reagan (2006)	194 British small and medium-sized companies from branches of industrial equipment and electronic appliance manufacturing	Industrial equipment: low growth, mild innovation, mature market Electronic appliances: high growth, constant innovation, immature market
Hambrick (1981)	Colleges, hospitals, insurance companies	3 geographically limited industries that have completely different characteristics Non-profit vs. For-profit environment
Hambrick (1982)	Art colleges, volunteer hospitals (both for and non-profits), life insurance companies	3 geographically limited industries that have completely different characteristics Non-profit vs. For-profit environment Low vs. High technological complexity
Hambrick (1983a)	Based on the PIMS database that consists of mainly production and manufacturing companies, organising the industrires into „mature/growing" and „innovative/less innovative" categories.	Growing industries vs Mature industries Innovative vs. Less innovative industries
Hambrick (1983b)	Mainly production and manufacturing companies based on the PIMS database, which manufacture high value capital goods (train equipment, metal casting plants, power plant and electricity grid equipment, turbines, etc.)	Two different types of mature industries: 1) slowly moving, high value, rarely purchased industrial equipments and companies in a stable market position 2) markets that are undergoing technological changes and changes in product differentiation, and firms whose positions are subject to change
Hawes-Crittenden (1984)	Retail – USA supermarkets	Significant market turbulence (the appearance of generic, private label branded products)
Helmig et al. (2014)	178 German community and privately owned training and non-training hospitals	Complex environment that can be described as uncertain with strong government regulation
Hoque (2004)	52 companies from New-Zealand that employ at least 100 people	Mostly manufacturing companies from sectors that can be described as broad and having different degrees of uncertainty.
James-Hatten (1995)	USA banking sector	Deregulation and increasing competitive intensity

Jusoh-Parnell (2008)	120 Malaysian production companies: manufacturing of electronic appliances, iron and steel-making, tire manufacturing, food industry, medicine, household appliances, furniture production, clothing and fashion industry	Sectors having rather heterogeneous environmental conditions, diverse branches where the common trait is that they have been recently deregulated and liberalised. The urge to innovate is strong, but resources are scarce.
Kabanoff-Brown (2008)	Very wide heterogeneous sample consisting of production and service companies from Australia that are listed on the stock exchange (FMCG, healthcare, industrial equipments, energy, telecommunications, etc.)	Heterogeneous companies listed on the stock market, various industries with different environmental characteristics. Apart from the effect of membership of the industrial and strategic cluster there is no explicit environmental contingency examined.
Laugen et al. (2006)	55 Australian, Danish and Norvegian small and middle-sized companies from the following industries: food, textile, paper-making and press, chemicals, plastic and metal-making, machine manufacturing, telecommunications, furniture production, cars, manufacturing of industrial equipment, construction, electronics	Diverse sectors that have very heterogeneous environmental conditions
Lin et al. (2014)	35 semiconductor manufacturing companies from the USA	Due to the high intensity of competition on a global scale, this industry can be described as one that has cooperation mechanisms between its local actors.
Lopes et al. (2010)	56 postal service companies that operate as a franchise in Minas Gerais province, Brazil.	Public service sector that went through strong institutional reform.
Matsuno-Mentzer (2000)	Heterogeneous sample containing companies of numerous production and manufacturing companies.	A heterogeneous sample consisting of a bunch of industries. Direct industry-influencing factors cannot be pointed out.
McDaniel-Kolari (1987)	US banking sector	Turbulent environmental changes in the financial sector: entry of new competitors, changing needs of consumers, technological advances, deregulation, disappearance of the interest rate ceilings
McKee et al. (1989)	Banking sector, the market of bank deposits	High, moderate and low (negative) volatility
Meyer (1982)	Hospitals in California	The effects of a sudden, significant environmental shock (physicians' strike) on strategic adaptation.
Meier et al. (2007)	More than 500 school districts and educational institutions in Texas (USA)	A sector that can be described as having significant institutional reforms and environmental turbulence
Miles-Snow (1978a)	Market of college textbook publishers	Moderate volatility
Miles-Snow (1978b)	College textbook publishers, electronic equipments in the automobile industry, food processing, healthcare	Industries that can be described as having different characteristics and facing heterogeneous environmental conditions. No explicitly examined factors can be determined.
Miles-Snow (1984)	Lincoln Electric (electric welding equipment) HP (computer hardware) Texas Instruments (computing, electronics) Canadian Pacific (railroad cargo)	Various industries, Turbulent vs. Stable industrial environment
Olson et al. (2005)	Extremey broad heterogeneous sample containing production and service companies	No single industrial factor's effect was explicitly examined.
Oosthuizen (1997)	211 South African companies from Western Cape province	Firms operating in sectors that can be described as having severe environmental uncertainty.
Parnell-Wright (1993)	USA, catalogue and mail order delivery companies	Dynamically growing but rather volatile market
Parnell et al. (2000)	137 vegetable, fruit and spice, i.e. grocery wholesaler companies from the United States	A sector described as having relative stability and moderate environmental change
Pearce et al. (1987)	A sample containing various production companies from one of the eastern states of the USA	Strictly „demarkated" market in terms of geography, although no explicit industrial characteristics have been examined.
Pinto-Curto (2007)	Portugese medical industry	Diverse environmental characteristics that are specific to the industries of drugs, pharmaceutical products and medicinal devices

		(stability vs. dynamic changes and innovative environment)
Pittino-Visintin (2009)	141 family owned small and middle-sized companies from the northern part of Italy (Friuli, Venezia, Giulia)	Companies operating in various sectors that face recession and an increasing intensity in competition
Pleshko et al. (1995)	Financial services – The market of the Florida credit unions	Strictly regulated, geographically protected market
Pleshko-Nickerson (2008)	Food, textile, metal processing and machine manufacturing industryies of the USA	4 heterogeneous industries that can be described as having very different environmental conditions
Rajagopalan (1997)	50 large electricity supplying companies (USA)	In companies that got under the control of professional and financial investors, a managerial reward (bonus) system based on performance was introduced. This motivational system helped to increase the turbulence in the internal environment.
Ruekert-Walker (1987)	The strategical business units (SBUs) of a Fortune Top 500 company that manufactures industrial equipment.	SBUs operating in dynamic and stable environments
Segev (1987)	A computer game simulation of the washing powder and detergent industry	Artificial industrial environment, free of uncertainties (e.g. inflation, low crediting rates). Stable growth, low volatility, high intensity competition
Segev (1989)	25 managers who took part in MBA couses, who now manage production and manufacturing companies	Companies that can be described as having a rather heterogeneous industrial environment
Sharma-Vredenburg (1998)	19 middle and upper management personnel of 7 big Canadian oil and gas industry companies	A sector that is being more and more „threathened" by being held accountable for environmental and social responsibility
Shimizu-Tamura (2012)	100 Japanese manufacturing companies	Sectors described by heterogeneous environmental characteristics and slight signs for economic dowturn.
Shoham et al. (2002)	193 Australian production and service companies and businesses providing export services in the following sectors: food, tobacco, textile, fashion, wood, furniture production, metallurgy, petrochemical companies, mining, paper and press industry, machine manufacturing companies, public transport	Very diverse and heterogeneous (e.g. in terms of turbulence) industry sectors that can be described as having various levels of export orientation
Short et al. (2007)	Wide heterogeneous sample containing both production and service companies from the USA: chemical and pharmaceutical industry, industrial equipment manufacturers, computer electronics, communications etc.	Wide sample consisting of mainly production companies operating in heterogeneous industries
Shortell-Zajac (1989)	Hospitals	Hospitals facing environmental turbulence (quickly growing, new service industries vs. settling in traditional healthcare)
Sim-Teoh (1997)	Australian, Malaysian and Singaporean companies	Companies from various industries operating in countries that can be described as having different environments and market economies
Slater-Narver (1993)	Wood and furniture industry of the USA	140 SBUs of one corporation operating in markets with completely different conditions, therefore no explicitly examined industry influencing variable can be specified
Slater-Olson (2000)	Heterogeneous sample consisting of production and manufacturing firms from 24 different industries	No actual comprehensive industry influencing factors can be specified
Slater-Olson (2001)	Extremely wide heterogeneous sample containing both production and service companies	The industries examined were not being influenced by major environmental factors
Smith et al. (1989)	Companies manufacturing electronic appliances	Well defined industry but nothing is known about its characteristics, so no explicitly examined environmental variable in the study
Snow-Hrebiniak (1980)	Semiconductor manufacturing, aviation, transport, plastic-making and vehicle manufacturing companies	Low, moderate and high unpredictability, Regulation vs. Deregulation
Talpová (2012)	155 manufacturing companies and their subsidiaries operating in the Czech Republic, which employ more than 50 people and companies run by Czech owners	Multinational companies: lower local knowledge, higher uncertainty Czech companies: deep local knowledge, low uncertainty
Tan (2002)	201 top managers of state-owned, community-owned Chinese companies and companies co-owned by foreigners	„Temporary, emerging" economy that can be described with high growth and severe enrironmental turbulence.
Tan-Litschert (1994)	Electronics companies from North China	Industry that can be described with significant decline
Tayaouva (2011)	114 owners and upper management personnel of subsidiaries of Turkish companies, operating in Kazakzstan and Kyrgyzstan	Market environments that can be described with significant growth but severe volatility

Thomas et al. (1991)	The market of consumer electronics manufacturers	Volatile environment: many new competitors, fast product obsolescence, loads of innovation, market „niches" continuously „popping-up"
Thomas-Ramaswamy (1996)	83 Fortune TOP 500 companies from the chemistry, oil and gas, and electronics industry	Companies of industries facing greatly varied environmental conditions, market structures, different degrees of competitive intensity and product differentiation
Veliyath-Shortell (1993)	USA hospitals (for-profit and non-profit)	Secular vs. Religious Non-profit vs. For-profit
Vorhies-Morgan (2003)	Freight delivery, cargo truck transportation	Industry that went through deregulation and is dynamically growing, and has an increasing competitive intensity
Woodside et al. (1999)	Middle and top management of 119 Finnish companies. The main sectors: machinery manufacturing, export services, retail, financial sector, distribution	Predictable environmental conditions, moderate, stable rate of growth
Zinn et al. (2008)	724 nursing homes from the United States	A branch that can be described as having an increasing competitive intensity due to the systematic publication of charts comparing performace indicators.

Source: Table made by the author

Table IX: The performance implications of M&S's strategic orientations

Study	Miles and Snow's 1. assumption	Miles and Snow's 2. assumption
Abernethy-Guthrie (1994)	Reactors and Analysers were not examined in the study	On the basis of a complex performance indicator derived from 12 effectiveness, profitability, adaptability and innovativity indicators examined, Prospectors outperform Defenders
Akbolat (2009)	Based on all dimensions, Reactors exhibit suboptimal performance compared to Prospectors, Analysers and Defenders	Prospectors performed the best in revenues per hospital bed, Analysers in the management of medical and other staff, while Defenders, in hospital bed occupancy rate
Andrews et al. (2006)	The suboptimal performance of Reactors was confirmed	On the basis of the CPA (CSP) indicator, Prospectors outperform Defenders
Aragón-Sanchez – Sanchez Marín (2005)	Reactors were not included in the study	Based on efficiency indicators, there is no significant difference between P, A and D, but in the case of adaptatability and innovativity indicators, P outperform A and D, in this order, in all three sectors
Bastian-Muchlish (2012)	Reactors were not included in the study	Prospectors outperform Defenders in non-financial performance indicators, but Defenders perform better in financial indicators
Bourgeois (1980a)	P, A and D outperform Reactors	The most outstanding business performance is exhibited by Analysers, which are able to accumulate optimum 'slack' and thereby to successfully adapt to the environmental circumstances
Chaganti (1987)	Reactor companies are outperformed by companies following a viable strategy	Defenders cutting their production costs and working for local markets proved to be successful in industries in a growth stage, while Prospectors engaged in differentiation proved to be successful in declining industries
Conant et al. (1990)	All three viable strategic orientations outperform Reactors	Although Prospectors have outstanding marketing abilities, their performance does not significantly differ from that of Defenders and Analysers, thus the business performance of all three 'stable' strategic orientations are nearly equal
Croteau et al. (1999)	Viable strategic orientations outperform Reactors	On the basis of both the efficacy and efficiency indicators, Prospectors perform better than Analysers and Defenders, between which no significant difference was found
Croteau-Bergeron (2001)	Reactor companies were not significantly outperformed by Analysers and Prospectors	Prospector companies outperformed Analysers and Defenders on the basis of both the effectiveness and efficiency indicators
Davig (1986)	Reactor companies are outperformed in both effectiveness and efficiency by companies following a viable strategic orientations	Prospector and Defender companies outperformed Analysers in the growth rate of both profit rates and sales revenues, although this did not prove to be significant in respect of effectiveness
Desarbo et al. (2005)	Reactors are consistently outperformed by others	Both Defenders, which have outstanding marketing capabilities, and Prospectors, which develop consciously and responsibly, ouperfomed others based on both effectiveness and efficiency indicators
Desarbo et al. (2006)	Reactors underperform both in profit and ROI compared to viable strategic orientations	Technological, marketing, market relations and IT capabilities contribute to the profitability of Prospector, Analyser and Defender companies to a different extent, between which no significant

		differences were found.
Dvir et al. (1993)	Reactors were not studied.	Surprisingly, not Prospectors but Defenders showed the most favorable performance in technological adaptation
Dyer-Song (1997)	The business performance of Reactors is exceeded by that of Prospectors, Analysers, but not always by that of Defenders	In respect of overall business performance, the order is P, A and D, while in terms of activities between corporate functions, they are also very similar, Analysers have lower performance in this dimension only in Japan
Evans-Green (2000)	The indebtedness indicators of companies following Reactor strategic orientation are much worse than those of Prospectors and Defenders	Prospector companies emerge from bankruptcy situations faster and at lower costs than Defenders
Forte et al. (2000)	In the case of an environmental shock, P and A companies as well as D and R companies changing their strategic orientation outperform companies that continue to preserve D and R orientation. It is important that R firms adapt faster than D companies	Prospectors and Analysers regularly outperform Defenders even within radically changed environmental conditions
Garrigós-Simon et al. (2005)	Prospectors, Analysers and Defenders outperform Reactors	Based on overall performance evaluation, there is no difference between Prospectors, Analysers and Defenders. In profitability, Analysers and Defenders outperform Prospectors. In the growth of sales revenue, Prospectors and Analysers outperform Defenders. In shareholder satisfaction Prospectors are the best, while no significant difference was found in customer satisfaction
Gimenez (2000)	In respect of the two effectiveness indicators examined, Reactors clearly underperform	Mixed results: In respect of the growth of sales revenue and the increase in the number of employees, Analysers and Prospectors, respectively, showed outstanding performance
Ghobadian-O'Reagan (2005)	Reactors were not examined in the study	Prospectors consequently outperform Defenders and Analysers in adaptability and innovativity indicators
Ghobadian-O'Reagan (2006)	Reactors are outperformed by viable strategic orientations	Prospectors perform better in all subjectively evaluated performance dimensions than Defender and Analyser companies
Hambrick (1981)	Reactor companies underperform relative to Prospector, Analyser and Defender companies	Prospector, Analyser and Defender companies are able to show nearly identical performance if managers consciously fit the elements of organisational configuration to strategic requirements. Furthermore, companies undergoing strategic changes are able to produce higher performance
Hambrick (1982)	Reactors were not subjected to study	Prospectors and Defenders are capable of even overall performance if their managers pay attention to environmental factors relevant to the pursued strategy
Hambrick (1983a)	The study examined only Defenders and Prospectors	In the case of efficiency performance indicators (ROI and CFOI), Defenders, while in the case of effectiveness performance indicators (change in market share), Prospectors show higher results
Hambrick (1983b)	The group of Reactor companies, which show a very heterogeneous picture, underperform relative to consistent strategic orientations	On stable markets, Defenders aiming at cost efficiency, asset awareness and quality, while in a changing environment, Prospectors exhibited optimal performance
Hawes-Crittenden (1984)	Prospectors regularly outperform Reactors, while Defenders outperform Reactors only in the case of efficiency indicators. In terms of the effectiveness dimension, Reactors outperformed Defenders.	The performance of Prospectors is clearly dominant.
Helmig et al. (2014)	Apart from financial profitability, Reactors are outperformed by viable strategic orientations in all performance indicators	In financial profitability, the Prospector/Analyser hybrid outperforms the other strategic orientations, no significant differences were found in the quality of patient care, Prospectors, Defenders and Prospector/Analyser hybrids have outstanding performance in the quality of processes, Prospectors do the same in capacity utilisation rates, while Prospectors and Prospector/Analyser hybrids do so in overall success
James-Hatten (1995)	Reactor companies underperform in the case of both efficiency and adaptability indicators	Highly mixed results, all three orientations are (un)successfull on the basis of certain indicators. Adaptation: A and P Efficiency: A and D In total: A
Jusoh-Parnell (2008)	Due to their low sample size, no conclusion can be drawn on the merit for the performance of Reactors	Significant differences were found in the following indicators: customer loyalty and satisfaction, ROI and growth rate of sales revenue. Based on all dimensions, performance of Analysers was outstanding.
Kabanoff-Brown (2008)	Reactors have lower performance than the three viable strategies	With respect to efficiency, Analysers outperform the other two strategic orientations, and with respect to

		share price to profit ratio, Prospectors exhibit the most optimal performance. The individual results are greatly affected by the specificities of the industry. In more innovative industries, Prospectors are the first but are closely followed by Analysers.
Lin et al. (2014)	Prospectors, Analysers, Defenders and Reactors show mixed results on the basis of profitability and innovativity indicators, but accurate numbers broken down by strategic orientation are not known.	
Matsuno-Mentzer (2000)	Reactors were not included in the study	The M&S strategic orientations significantly moderate the relationship between market orientation and business performance, in respect of ROI, Defenders outperforms Analysers and Prospectors, while in market effectiveness the result of Prospectors proved to be the highest
McDaniel-Kolari (1989)	Reactors were not examined explicitly	Performance of Prospectors, Analysers and Defenders is nearly identical if they implemented well the theoretically appropriate strategic marketing characteristics
McKee et al. (1989)	Reactors do not show lower performance than the three viable strategies under any market conditions. Interestingly, in a turbulent environment, Reactors outperform Analysers and Prospectors both in the change of market share and in the case of ROA and ROI. And on markets that can be characterised by stagnation and decline, they precede Prospectors and Defenders in the case of the growth of market share.	Surprising results On volatile markets: Defenders and Reactors outperform Prospectors and Analysers in both effectiveness and efficiency indicators. On moderately volatile markets: Analysers overtake everyone in profitability, while fall behind everyone in change in market growth. On negatively volatile markets: Defenders exhibit better performance than everyone else on the basis of the efficiency indicators, while with regard to market share (%) Reactors and Analysers exceed Prospectors and Defenders.
Meyer (1982)	Reactors were outperformed by the other three strategic orientations	Mostly Prospectors are able to adapt to a sudden environmental shock in respect of the dimensions relating to both effectiveness and efficiency
Meier et al. (2007)	Reactors did not prove inferior either in the proportion of successfully passed students or the proportion of students admitted to higher education	According to the proportion of successfully passed students, Defenders, while based on the proportion of students admitted to higher education, Reactors exhibited the best performance
Miles-Snow (1978a)	Reactors are outperformed by Prospector, Analyser and Defender companies in any environment	Prospector, Analyser and Defender companies are able to show nearly identical business performance
Miles et al. (1978b)	Reactors are outperformed by Prospector, Analyser and Defender companies under the conditions of any industrial environment.	Prospector, Analyser and Defender companies are able to show nearly identical overall business performance
Miles-Snow (1984)	Prospector, Analyser and Defender companies outperform Reactors	Prospector, Analyser and Defender companies are able to show nearly identical overall business performance if their organisational structures and HR systems appropriately fit into the selected strategy
Narver-Slater (1993)	Reactors were not included in the study	With regard to profitability, there is no significant difference between P, A and D companies. In successful introduction of new products, Prospectors and Analysers consistently outperform Defenders.
Olson et al. (2005)	Reactor companies were not included in the sample	Prospector, Analyser, Low Cost and Differentiated Defenders provide nearly identical performance if strategic orientation, the structural characteristics of the marketing function and behavioural orientation appropriately fit together
Oosthuizen (1997)	Reactors do not perform worse in a context that can be characterised by low PEU	The Prospector and Differentiator hybrid performed better than all other strategic orientations
Parnell-Wright (1993)	Reactors underperform compared to Analysers, Prospectors and Defenders in respect of both efficiency (ROA) and effectiveness (growth rate of sales revenue)	Prospectors and Analysers provided the best performance in effectiveness (growth rate of sales revenue) and efficiency (ROA), respectively
Parnell et al. (2000)	Reactors clearly underperform viable strategic orientations	Companies pursuing 'Balancing' hybrid strategic orientation realise significantly higher profitability than pure strategic behavioural patterns
Pearce et al. (1987)	Prospector, Analyser and Defender companies outperform Reactors	Prospector companies with formal strategic planning systems focusing on internal growth outperform Analysers and Defenders in the case of both efficiency and effectiveness
Pinto-Curto (2007)	The only two Reactor companies in the sample were underperformed by the other companies	Differences in performance between viable strategic orientations were not examined
Pleshko-Nickerson (2008)	Reactor companies are outperformed by Analysers, Prospectors and Defenders with regard to efficiency, effectiveness and adaptability alike.	Analysers showed the most outstanding performance in both effectiveness and efficiency followed by Prospectors and Defenders. In adaptability Analysers are also the best and surprisingly Defenders outperform Prospectors
Pleshko et al. (1995)	The business performance of Reactors falls short of	In general, Prospectors show the most outstanding

	the other strategic orientations	performance even in the case of efficiency indicators, Analysers perform nearly at the same level on the basis of one or two dimensions
Rajagopalan (1997)	Reactors did not prove to be inferior even on the basis of several performance indicators (e.g. market penetration and efficiency).	Defenders perform better in efficiency type indicators, while Prospectors do so in effectiveness.
Ruekert-Walker (1987)	Reactors were not included in the study	Analysers and Defenders are more successful in the handling of conflicts than Prospectors, the highest dissatisfaction between functions is found also among Prospectors
Segev (1987)	The performance of Reactors do not result in appropriate business performance even in the case of a strategic planning system that is applied if needed	In the case of most effectiveness and efficiency indicators, Defenders are outperformed by Analysers and Prospectors, which exhibit nearly identical results
Segev (1989)	Reactors consistently underperform the three viable strategies	In the case of efficiency, Analysers and Defenders, while in the case of effectiveness, Analysers and Prospectors show outstanding performance. In general, Analysers prove to be the most successful
Sharma-Vredenburg (1998)	Reactor companies are outperformed by Prospectors	Environmental performance of Prospectors is outstanding, which also led to an increase in competitiveness
Shoham et al. (2002)	The business performance of Prospectors, Defenders, Analysers and Reactors was not compared explicitly, the study examined what effect the various functional areas and market orientation have on export and overall business performance within certain strategic orientations	
Shortell-Zajac (1989)	Reactor companies were not involved in the study	In adaptability and innovativity dimensions, Prospectors clearly outperform Analysers and Defenders
Slater-Olson (2000)	The business performance of Reactors falls short of that of Prospector, Analyser, Low Cost and Differentiated Defender companies	Prospector, Analyser, Low Cost and Differentiated Defender companies achieve the same performance if their sales management functions appropriately fit the strategic orientation to be followed.
Slater-Olson (2001)	Reactors were not subjected to study	The four viable strategies provide equivalent performance if the business strategy (Prospector, Analyser, Low Cost Defender and Differentiating Defender) and the marketing strategy (Aggressive, Mass, Minimising and Value) fit optimally
Smith et al. (1989)	Prospector, Analyser and Defender companies outperform Reactors	Prospector, Analyser and Defender companies exhibit similar performance only if the size of the organisation fits the strategic orientation. It is interesting that Prospectors and Defenders showed higher performance if they had a larger/smaller size
Snow-Hrebiniak (1980)	In competitive industries, the business performance of Prospectors, Analysers and Defenders surpasses that of Reactors, but in a regulated environments, the opposite may also occur and Reactors are also able to show outstanding performance	Analysers outperformed Prospectors and Defenders in the case of most industries examined: semiconductor manufacturing companies, airlines and plastic and motor vehicle companies
Talpová (2012)	Due to small sample size, Reactors were not included in the methods aimed at performance assessment	The rate of return on assets (ROA) of Analysers exceeded those of Prospectors and Defenders
Tan (2002)	Reactors were not examined in the study	Defenders are the best performers among state- and community-owned companies, Prospectors in the case of private companies, and Analysers in the case of joint ventures
Tan-Litschert (1994)	Reactors were not included in the research	Defenders are the best in overall performance and profit, while Prospectors in market share
Thomas et al. (1991)	Reactors were not examined in the study.	Prospector and Defender companies show similar performance if the personal characteristics of their senior executives appropriately fit the followed strategy. This finding is stronger for Prospectors operating in dynamic environments.
Thomas-Ramaswamy (1996)	Reactors were not examined in the study	Prospector and Defender companies show similar performance if the personal characteristics of their senior executives appropriately fit the pursued strategy. This finding is stronger for Prospectors operating in dynamic environments.
Veliyath-Shortell (1993)	Reactors were not examined	Prospectors outdid Defenders also in profitability.
Vorhies-Morgan (2003)	Reactors were not examined	Prospectors, Analysers and Defenders provide nearly identical performance in respect of both effectiveness and efficiency if organisational characteristics of marketing function appropriately fit selected strategy
Woodside et al. (1999)	Reactors were insignificantly outperformed in profits, ROI and customer satisfaction alike	Prospectors are the best performers in profit, ROI and customer satisfaction alike

Source: Table made by the author

Table X: Depicting the organisational profiles of top performing M&S's SOs

Dimension	Prospectors	Analyser	Low-Cost Defenders	Differentiated Defenders
Product range	Wide: mainly new products	Wide: conventional and new products mixed	Narrow: few, traditional products	Narrow: conventional and new products mixed
Targeted and served customer segments	Many, constantly changing customer segments	Many: both changing and stable segments	Few, wide, stable segments	Few, narrow, stable segments
Organisational structure	Divisional	Matrix	Functional	Functional/Divisional
Organisational size	Medium	Large	Large	Small/medium
Marketing strategy	Aggressive marketing	Mass marketing	Marketing minimisation	Value based marketing
Formalisation	Informal	Slightly informal	Formal	Informal
Decision making	Decentralised	Decentralised	Slightly centralised	Decentralised
Tasks and employee competences	Generality and specialisation	Specialisation and generality	Generality	Specialization
Behavioural orientation	Innovation and customer	Customer, competitor and innovation	Internal (cost) and competitor	Customer, competitor and internal (cost)
Conflict managing method	Integrative	Integrative	Integrative/Compulsion	Integrative
Promotion	Differentiation-based	Differentiation-based	Price-based	Differentiation-based
Ideal environment	Technological and market turbulence	Moderate growth markets	Stable, moderate growth or stagnant markets	Moderate volatility or stagnant markets
Strategic Planning system	Formalised, considerable market research, enhanced participation of senior managers and other organisational units	Formalised, considerable market research, enhanced participation of senior managers and other organisational units	Formalised, less market research, low participation of senior managers, high participation of other organisational units	Informal, prominent market research, enhanced participation of senior managers and other organisational units
Sales strategy	Relationship-based	Relationship-based	Transaction-based	Relationship-based
Sales function	Outsourcing or „indoors"	„Indoors"	Outsourcing	„Indoors"
Supervision of sales function	Moderate	Moderate	Low	Mixed
Supervision methods of sales personnel	„Output"-based	„Output"-based	„Output"-based	Behaviour-based
Rewarding of sales personnel	Low base salary + high incentive bonus	Stabil base salary + bonus	Stable base salary + less bonus	High base salary + less bonus
Production	Mass customisation and prototypical character, emphasis on effectiveness and product design	High volume, low cost, mass customisation and sometimes prototypical manufacturing	High volume, low cost, emphasis on efficiency and standardisation of processes	Low volume, medium or high cost, one to one customisation, emphasis on quality
Basic HR approach	Acquisition of human resources and competences	Acquisition and allocation of human resources and competences	Development and training of human resources and competences	Development and training of human resources and competences
HR recruitment and admission	Multiple at entry and in-house as well, based on professional and psychological aspects	Mixed	Non-recurring, based on filtering the inadequate employees	Multiple at entry and in-house, based on professional, psychological and relationship-based aspects
Corporate trainings	Moderate	Many or moderate	Many	Many
Career plan of employees	Informal, moderate	Formal, comprehensive	Formal, comprehensive	Formal, comprehensive
CEO age	Younger	Mixed	Elder	Mixed
CEO education	High	High	Lower	High
Time spent at the company before elected as CEO	Less	More	Much	Much
CEO tenure	Less	More	Much	Much
CEO education, professional qualifications	R+D, product development, marketing	Production, marketing	Production, finance and accounting	Marketing, HR
Vertical integration	Seldom, rather backwards	Yes, both forward and backwards	Yes, both forward and backwards	Yes, rather backwards
Horizontal integration	Yes	Yes	Not typical	Not typical
Autonomy of organizational units, divisions, SBUs	Large	Medium	Small	Medium

Source: Table made by the author

Table XI: Classification and terms of specification variables

TYPOLOGY OF SPECIFICATION VARIABLES	Correlates to dependent and/or independent variables	Not related to neither dependent nor to independent variables
Interaction effect is not significant	*Intervening, Exogenous Antecedent, Suppressor or Independent variable*	*Homologiser Moderator*
Significant interaction effect	*Quasi Moderator*	*Pure Moderator*

Source: Figure made by the author based on Sharma et al. (1981)

Table XII: Summary of the moderating effect of environmental factors influencing the relationship between strategy and performance

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Agbejule (2005)	Accounting system used by management (MAS) and strategy	Managerial performance	Perceived environmental uncertainty (PEU)	The moderator variable inhances the effect of the strategic orientation and MAS on the performance of the managers.
Badri et al. (2000)	Operations strategy	The company's overall business performance (high / low)	Perceived environmental uncertainty (PEU)	The PEU has a direct impact on business performance; those companies are capable of higher performance, which adapt their operational strategy to the environmental changes.
Bastian-Muchlish (2012)	Strategic orientation: Defender and Prospector	Financial/Non-financial perfomance measures and organisational performance	Perceived environmental uncertainty (PEU) and competitive intensity	In case the extent of competition is high in the environment, the growth (Prospector) orientation can be the key to success, especially considering non financial indicators. The PEU, characterized by the changing intensity of the competition on the market, moderates the positive relation between strategic orientation and organisational performance, as well as the relation between strategy and the utilization and development of non financial metrics.
Bechor et al (2010)	Success factors of SISP (Strategic Information Systems Planning): Planning and implementing strategy	Success of SISP: Effectiveness, Efficiency	SISP environment (dynamism, business strategy, importance of IT, heterogeneity), SISP approach	Positive connection between the success factors and business performance. The connection between the independent and dependent variables is greatly affected by the external environmental and organizational factors of the SISP implementation.
Bisbe-Malagueno (2012)	Content elements of strategic orientations' performance measurement system: 1. Integration of goals 2. Involvement of senior managers 3. Cross-functional relationships 4. Exploration of causal relationships 5. Involvement of managers of different functional areas 5. Ongoing goals/action plans	Financial performance of the organisation (ROA, ROS)	Environmental dynamics	The moderating variable has a statistically evincible, but very slight negative effect on the dependent variable. However amongst the majority of the dependent and independent variables, a significant relation can be shown.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
	6. Multivariate indicators			
Bourgeois (1985)	Strategic consensus, number of goals/objectives	Net sales revenue, capital, return on investment, EPS growth	Environmental uncertainty	The moderating variable has a direct positive effect on the dependent variables as well, besides it can be shown that the intensity of the relationship between the strategic consensus and the performance indicators is facilitated by the degree of environmental uncertainty.
Bstelier (2005)	Marketing and technological expertise, organization of the team involved in the project and process management in the new product development strategy	Time efficiency (in case of new product launch)	Perceived environmental uncertainty	The marketing expertise does not influence the dependent variables, as much as technological proficiency. One of the most influential factors is the composition of the project team. Process organisation has a direct effect on time management. The moderating variable has a direct effect on the depending variable (fe. in Australia it is very strong, while its effect is weaker in Canada), but it does not directly affect the relation of independent and- dependent variables.
Chathoth-Olsen (2007)	Corporate strategy and capital structure	Performance of the company (ROE, ROA, ROS, ROC)	Perceived environmental risk	The capital structure and the strategy of the company influence the development of the key performance indicators. The management method of environmental impacts has an effect on the relationship of independent and dependent variables. The macrobusinessal effects influence the capital structure.
Child (1972)	HR and technological strategy, organisational structure, scale of operation	Operational efficiency	Complexity, diversity, lack of munificence	The environmental factors do not have a strong moderating effect on the relation between strategy and performance, as the previous theoretical literature and empirical researches claimed.
Choe (2003)	Strategic development of the information system	ROS, ROA, PNP, PFP	Perceived environmental uncertainty (PEU)	The strategic application of the information system has a positive effect on the business performance of the company. PEU moderates the relation of the dependent and independent variables, its negative effect is enhanced when the explanatory

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
				variable is chosen incorrectly.
Chong-Chong (1997)	Accounting strategy and system applied by the management (MAS)	SBU's overall business performance	Perceived environmental uncertainty (PEU)	The PEU operates as an independent (explanatory) and moderating variable, so it is an important determinant of the SBU performance.
Davis-Walters (2004)	Aggressive, "Intermediate" (Moderate) and Passive stretegic orientation	Composite indicator for business performance combining: effectiveness, efficiency and operational indicators	Operating environment described as: Hostile vs. "munificent" (technological and business) and market driven vs. bureaucratic coordination mechanisms	The positive effect of strategic orientation on business performance can be characterized by the market coordination mechanisms, which enhance in "generous" operating environment. Companies following the aggressive strategic orientations however has an outstanding performance, regardless of the environmental conditions.
DeSarbo et al. (2005)	Hybrid strategic orientations combining Miles and Snow's behavioural patterns and their capabilities	Profitmargin, ROIPEC, ROI, ROA, RMS, CUSRET, KEYCUSRET, Revenue growth, profit margins, sales revenue and ROI relative to the objectives of the SBU	Environmental uncertainty	The match of strategic orientation and the capabilities of the company, and the strategic orientation and degree of renvironmental uncertainty have significant effect on the development of the performance indicators.
Dröge-Calantone (1996)	Organisational structure and strategic orientation (dominant/non-dominant) for new product development	Product development success	Environmental uncertainty: level of risk, presence of competitors	In case of less dominant competitors, the effect of strategy and structure on the product development success is more intense, than in case of dominant competitors.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Ensley et al. (2006)	Transformational or transactional internal strategic orientation and leadership style	Overall business performance, development of revenue and costs, income risk	Environmental dynamics	Environmental uncertainty intensifies the positive relationship between transformational strategy and- leadership styles, as well as performance, while in case of the transactional uncertainty no moderating effect can be detected.
Forte et al (2000)	Prospector, Analyser, Defender and Reactoe strategic orientations	Profit margins, development of revenues and expenses	significant environmental shock	The environmental shock significantly affects the relationship between strategy and performance, but in case of successful strategy amendment this moderating effect declines.
Fredrickson-Mitchell (1984)	Strategic decision-making and organisational structure	Business performance	Environmental uncertainty	Strategic decision making based on the rational model does not result in outstanding business performance at all levels of environmental uncertainty.
Golden (1992)	Strategy of SBU (M&S) Degree of centralisation Centralisation of environmental monitoring Centralisation of strategic planning process	Net profit and market share	Relationship of SBU and corporate executives	Those companies, where SBU strongly controlls those activities upon, which the strategy is based on, bring intensified performance. This also means, that in case of those factors, which do not have direct connection to the SBU strategy, the degree of centralisation is not important, because it does not increase performance.
Gotteland-Boulé (2006)	Market orientation: consumer-, competitor- and technology oriented strategic orientations	Success of new product launch: number of sales compared to competitors and other own products, market share, ROI	Environmental conditions: complexity, capacity, dynamics	The new product launches are successful due to the combination of technological and customer orientation. The environmental conditions only slightly moderate the relationship of market oriented strategy and the success of new product launches.
Hoque (2004)	Strategic orientations and priorities	Sales revenue, market share, success of R&D and product development, customer satisfaction rate	Environmental uncertainty	There is positive relation between strategy and non financial performance indicators. The application of these non financial indicators is particularly important during performance evaluation, those neglecting will have worse financial performance in the long term. The positive relation between environmental uncertainty and performance is not significant.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Hoque (2005)	Non financial performance: customer satisfaction, perspectives of internal processes, learning and growth potential, financial and labour efficiency, process development efficiency, new product launch success, staff training, deliveries accuracy, long term relationship with suppliers, employees relations, health, safety, satisfaction, speed of consumer responses	Financial performance: warranty reparation costs and market share	Environmental uncertainty: the behaviour of suppliers, customer needs, taste and preferences, deregulation, globalisation, the activities of competitors, information technology, governmental regulation and legislation, business environment, industrial relations	The know-how of environemtal uncertainty is crucial for the effective analysis of non financial performance. The study of environmental uncertainty has a positive moderating effect on the relationship between the dependent and independent variables. Those managers, who assume high environmental uncertainty, evaluate non-financial indicators positively.
Jiao et al (2013)	Dynamic capabilities of strategic orientations: detecting options, capability of replanning, organisational flexibility, technological flexibility	Sales, market share profit before tax, market share	Environmental dynamics: product demands of the consumers, consumer expectations of the company, products of the competitors, technologies applied in the industry for manufacturing and process management, state regulations regarding the sector	In dynamic environment, the ability to recognise and re-design opportunities has a significant effect on the business performance of the company. Environmental dynamism moderates the relation between dynamic capabilities and business performance.
Kabadayi et al (2007)	The typical strategy formalisation, centralisation, specialisation, number of channels used, direct vs. indirect channels	Sales volume, sales growth, profit, channel performance	Environmental complexity, dynamism (frequency, predictability) endowment with factors	It is crucial for outstanding business performance to suit the used channels and the business strategy to the environmental conditions. The impact of proper fit on the performance is enhanced by the dynamism and complexity of the environment.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Kotha – Al-Nair (1995)	Strategic orientation characteristics: cost-efficiency, capital expenditures and intensity, intensity of advertisement and marketing	Profitability, growth (sales, employees, distribution)	Environmental uncertainty: interdependence, resource availability and endowment, technological change, market concentration	Corporate strategy and the environment play a significant role in the profitability of the company. Only the environmental changes contribute to the growth of the company, so in this case environmental uncertainty plays the role of a "so to say moderating variable"
Köseoglu et al. (2013)	Strategic orientations of Miles and Snow and Michael Porter: Prospector, Analyser, Defender, Reactor	Financial indicators: Sales revenue, profit, ROA, ROE, ROS, market share, general business performance and positions achieved relative to competitors, Non-financial indicators: satisfaction of employees and consumers, employee fluctuation, corporate image	Degree of market and technological turbulence, competitive intensity in Turkish hospitality sector	The results are miscellaneous, however most experience proves the moderating effect of the environmental factors. In the Turkish tourism industry those hotels following the best performing Defender/Cost-Leader and Prospector/Focusing strategy rather in case of the detection of higher level of turbulance showed outstanding financial and non-financial results.
Li (2005)	Examination of corporate strategy along the following dimensions: company size, age, capital structure, marketing and technological competencies	ROI, ROS, ROA, profit, revenue, market share and increase of operational efficiency, operational CF, reputation	Intensity of competition, degree of price competition, stage in the product life-curve, growth of the sector, resource endowments of the environment	The corporate strategy has positive effect on performance, in case the level of environmental uncertainty is high and the given company has strong marketing competencies.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Lukas et al. (2001)	Prospector, Defender and Performance-oriented strategic orientations and their characteristics: type of product and market, personal decision-making of top management, allocation of resources, intensity of R&D, market share and profit objectives, affiliated companies: domestic/international	Market share, profit, ROA, ROS, sales growth, overall business performance, competitive market position	Complexity of the environment, dynamism and hostile nature: technological maturity, internationalisation, regulations, suppliers, consumers, social-cultural factors, presence of competitors, development of the economy	The moderating effect of environmental factors can be observed in certain strategic orientations, while in other cases it cannot be. It is interesting that the (theoretically) optimal fit of strategic orientation and environmental conditions does not lead to higher performance.
Matanda-Freeman (2009)	Strategic orientation for willingness to cooperate with other companies; corporate power and commitment	Intensity or increase of export sales, profitability, market share	Environmental volatility, market turbulence, degree of competitive intensity	The environmental uncertainty of the export channels perceived by the suppliers, has a significant negative impact on the export performance. The environmental volatility and intense competition of suppliers fosters cooperation and commitment between suppliers and customers, which may result in higher export performance.
Matsuno-Mentzer (2000)	Market orientation	ROI, sales growth, market share, share of revenue from new products (%)	Defender, Analyser, Prospector strategic orientations	Compared to the Prospectors- and Analysers, the Defenders can increase their ROI, if they raise the level of market orientation. The Defenders can realize the greatest growth in sales, market share and new product sales by increasing market orientation. Analysers grow less in all performance dimensions with increased market orientation.
McArthur-Nystrom (1991)	Capital intensive and soft strategies, number of new sites, return on investment	ROI	Environmental dynamism, complexity, factor endowment	The environmental dimensions produce a significant interactional effect with strategies, in other words the environment positively moderates, enhances the relation between strategy and performance.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Menguc-Auh (2008)	Prospector and Defender strategic orientations characteristics: exploitation of natural resources, support of R&D, take account of consumer preferences, competitor orientation, interfunctional coordination	Profitability, ROI, ROS, ROA, profit, sales revenue, market share, CF development	Environmental dynamics: intensity of competition, promotion and price competition, variation of consumer needs and habits, tendency to try new products	In case of neither the Defenders not the Prospectors exploiting natural resources and ambidexterity has negative effect on business performance. Environmental dynamism has negative impact on Defenders performance, but positive effect on the Prospectors.
Miller (1988)	Marketing and innovation-based differentiation: market segmentation, prestige pricing, width of promotional channels, cost of innovation: R&D expenditure/revenue, product and market innovation expenses/income, cost-based management, breadth of view: wide product range, technological diversity	Profitability, ROI, net sales revenue	Uncertainty of environmental factors: unpredictability, dynamism, heterogenity	The differentiation by innovation and the cost of innovation is correlated with environmental uncertainty and dynamism. Differentiation by innovation also corralates with unpredictability, however the cost of innovation does not. The marketing differentiation correlates with each environmental factor. The cost-based leadership negatively correlats with uncertainty, unpredictability and dynamism, but this is not significant. The moderating effect of environmental factors shows a mixed picture on the development of the relations between differentiating and cost based strategies, and profitability and sales revenue indicators.
Nandakumar et al. (2010)	Cost leadership and Differentiation strategic orientations	ROA, ROS, overall business performance compared to the goals set by the company and competitors	Environmental dynamism and degree of hostality, and mechanical/organic internal organisational structure	The environmental dynamics and level of hostility can be determined as significant moderating variables considering the relation between strategy and performance. In case of low hostility, a cost based strategy while in hostile environment differentiating strategy performs better. It is interesting that in dynamically changing environment the cost based strategy, and in stable conditions differentiating strategy shows better financial performance. The moderating effect of organizational structure shows mixed results.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Newkirk – Lederer (2006)	Adaptive, Analser, Collaborative and Reactor information strategy and system	Success of SISP: Effectiveness, Efficiency	Dynamism, heterogeneity, endowment of resources	The strategic concept has little impact on the success of planning, but the preparation / development of strategy implementation is closely related have a close colleration to efficiency and success. Environmental uncertainty has moderating effect on the efficiency and the effectiveness of some strategic planning phases.
Olson et al. (2005)	Characteristics of Prospectors, Analysers, Low-cost Defenders, Differentiated Defenders: cost-, customer-, competitor-, innovation orientation structure: formalisation, decentralisation, specialisation	ROS, ROA, growth rate of sales revenue	Market turbulence, technological turbulence, size of the division	In case of Analysers consumer and competitor orientation has positive impact on performance, when innovation orientation has negative, and the effect of structure is not relevant. In case of Prospectors decentralization and specialisation, consumer and innovation orientation have positive effect, whereas competitor orientation has negative effect on performance. In case of low cost Defenders cost and competition orientation, and decentralisation have positive effect, however innovation orientation has negative effect on performance. In case of differentiated Defenders consumer orientation and formalization have a positive impact on performance.
O'Reagan-Ghobadian (2005)	Defender, Prospector, Analyser, Reactor strategies	Technological commitment: level of automatization, use of management tools (TQM, Kanban, JIT, failure analysis systems, benchmarking)	Stable or changing environment	Prospectors are willing to invest in the development of new products, while Defenders rather modify existing products. Prospectors focus on using new technologies and are more open to management tools. The dynamic environment enhances the relation between strategic orientation and innovative techological / management solutions, in which cases the companies are willing to invest more resources into innovation development.
Panagopoulos – Avlonitis (2007)	Sales strategy: segmentation of customers, setting priorities, targeting, single/multi channel sales model	Sales force: CRM, sales revenue, financial performance (ROI)	Uncertain demand, consumers' solution orientation intensity of competition and technological turbulence, penetration of common industry practices	The solution orientation of consumers does moderate the relation between sales strategy elements and performance, while other environmental factors do not.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Parnell et al. (2012)	Basic strategic orientations of Porter: Cost leadership, Differentiation, Focusing and their combinations	Sales revenue, profit, ROA, ROE, ROS, market share, general business performance and relative positions achieved in comparison to main competitors	Market and technological turbulence, degree of competitive intensity + Chinese, American and Turkish business contexts characterised by various degress of the abovementioned	Miscellaneous Results: In different markets companies experiencing different levels of turbulance create different strategic orientations, which cause performance divergences. In the United States and Turkey companies with outstanding performance following „combined" strategic orientation rather prevail in uncertain environment; whereas in the Chinese market the most successful companies prefer stable and contingent conditions. Most of the results confirm more the moderating effect of the environmental factors.
Pelham (1999)	Low-cost strategy, degree of market orientation, relative level of sales	Marketing /sales efficiency, growth/share, profitability, company growth index	Market size, level of competition intensity and product differentiation, consumer differentiation, technological turbulence, environmental complexity, dynamism, munificence	The intensity of the competition does not moderate the relation between market orientation and performance. SMEs have better capabilities to adapt to the environmental conditions and changes. In case of small firms operating in bigger industries, have their own operational and environmental conditions, which heavily impacts their performance.
Prescott (1986)	Asset-efficient, Cost-effective and Differentiating strategy	ROI	Investment intensity, capacity utilisation, labor productivity, relative direct cost, production cost/revenue, R&D expenses/revenue, marketing expenditures/revenue. relative product quality, relative market share	The characteristics of the market structure, as environmental moderator variables significantly influence the strength of the stochastic relation between the strategy and the profitability, but do not change the shape of the relationship.
Slater-Narver (1994)	consumer oriented, competitor oriented and balanced external orientation	sales volume, ROA, success of new product introduction	market turbulence, technological turbulence, market size, the supportive ability to of competitive environment	Environmental factors do not have moderating power. Market orientation is particularly important for the companies. It is also essential, to flexibly shift resources and to provide prompt responses to consumers needs and competitor activities.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Song et al. (2001)	Cross-functional integration typical for strategy, level of technology and marketing synergies and product-specific benefits	Technological salience, marketing effectiveness, competitiveness, ROI	Technological uncertainty	Cross-functional integration has a strong impact on financial performance and technological perfection, when the perceived technological uncertainty is high. In high technological uncertainty, cross-functional integration has a low effect on marketing effectiveness and competitiveness. Technological synergy has weak effect on the technical perfection when technological uncertainty is high, but its impact on the product-specific benefits is high. In case of high uncertainty marketing synergy has weak effect on marketing effectiveness. The product-specific advantage has low impact on financial performance in case of increased environmental uncertainty.
Souder et al. (2003)	R&D, typical for strategy and marketing integration	Effectiveness of new product developments	Environmental uncertainty	Marketing integration clearly enhances the effectiveness of the new product development, but at the same time the cost of the NPD as well. In high environmental uncertainty deeper level of marketing integration leads to greater efficiency.
Spital-Bickford (1992)	Competitive strategy: product innovation, differentiation in sales and service, production costs, width of product/market Product and technological strategy: R&D/revenue, depth of technological competencies, scope, key technological portfolio, internal/external resources	Market share growth, annual sales volume, ROS	Dynamics in production technology, competitive intensity, product and technology dynamics, environmental munificence, level of industry concentration	Companies can achieve outstanding results with high technological dynamism and continuous product innovation and service differentiation. In low dynamic environment sales differentiation, and a broad portfoliostrategy is proven to be effective.
Srnivasan et.al. (2011)	Quality of strategic partnership	Supply chain performance	Environmental uncertainty, demand and supply risk	Supply-side risk does not have a significant moderating power on the quality of partnership and performance. There is a positive relation between quality of the partnership and the performance when environmental uncertainty is higher. The impact of demand uncertainty strengthens the relation of the two factors.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Swamidass-Newell (1987)	Characteristics of manufacturing strategic orientations: cost, quality, flexibility, independence	Sales revenue, growth of ROS and ROA	Environmental uncertainty (high-low)	Environmental uncertainty has significantly effected the content elements of strategic orientation of the production, but have not affected the performance directly. However, the strategic orientations have substantially determined the performance, thus mixed results could be registered on the moderating effect of environmental uncertainty.
Tan (2002)	Prospector, Analyser, Defender, Reactor strategies, ownership structure: private, public, community property or joint venture	Financial performance	Complexity, dynamism, hostile/munificent environment	The Analyser strategy makes the behaviour of the firms more predictable, therefore increasing their performance even in uncertain environment. In an uncertain environment for public ownership the "Defensive" strategy, for private ownership the proactive strategy works best. In rapidly changing environment, communal property is the most effective.
Tan-Tan (2005)	Characteristics of Prospector, Analyser, Defender strategic orientations: future planning, foresight, proactiveness, risk aversion, company size	Profitability	Complexity, dynamism, hostile/munificent environment	The moderating effect of environmental factors is substantial, the capability of rapid switch between strategies is very important in dynamically changing environment to achieve outstanding performance.
Tsai-Huang (2008)	Prospector strategic orientation	Results of new product development and launch (NPD)	Technological uncertainty, market uncertainty	High technological uncertainty strengthens the link between Prospectors and the success of new product launches. If a company wants to be successful in a rapidly changing IT industry, the NPD team can achieve results with radical product innovation and competitive product design.
Venkatraman – Prescott (1988)	The degree of fit between corporate strategy and environmental conditions	ROS, ROI	Environmental stability and fragmentation, industry maturity, the proportion of export-import activities	Those companies which do not coordinate their strategies with their environment, perform significantly worse, regardless of the development of the moderating environmental variables.
Venkatraman – Prescott (1990)	The degree of fit between corporate strategy and environmental conditions	ROS, ROI	Environmental factors: attributes of the industry (eg. life cycle), the stability of company's market share, import/export activities, labor market etc.	Environmental factors do not moderate the relationship between strategic fit and performance. "Retractive", "Isolation" strategies have a significant negative effects on performance in any environmental circumstances.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
Verdu et al. (2012)	Strategic real options and their features: R&D intensity, operative real options, company size	Degree and effectiveness of technological innovation and	Environmental uncertainty, predictability of environmental changes in the industry	The environmental uncertinty moderates the level of strategic options and the effectiveness of technological innovation. In case of high environmental uncertainty strategic options increase the flexibility, the adaptability and the innovational performance of the company.
Waldman et al. (2001)	Transactional or charismatical leadership strategy	Net profit margin, ROA	Environmental uncertainty	The moderating factor of environmental uncertainty was not significant for either the charismatic or the transactional leadership model. Transactional leadership has not correlated with performance, but in case of the charismatic leadership significant positive relation can be observed.
Wang et al. (2012)	TQM characteristics: customer focus, basis for cooperation, continuous development, employee satisfaction, knowledge, process management, leadership. Market Orientation: intelligence generation, common interpretation, ability to organisational response	Sales and market share growth, decrease of cost of sales, ROI, customer loyalty, satisfaction, return, assignment	Turbulence of the market and technology, degree of competitive intensity	TQM and market orientation has a positive impact on the performance of hotels. The effect of low levels of environmental factors (eg. Low turbulence, weak competition) is not as significant as the strong factors' (eg. Fierce competition, strong turbulence) hence the moderating influence is proven.
White et al. (2013)	Relation based strategy of wholly owned foreign subsidiaries: absorption, adaptation, integration and reconfiguration, revitalisation. Using market (customer orientation, product development, brand value etc.) and non-market instruments (eg. complying with rules, sharing information, protection of	Net profit growth, sales figures, market share, ROA	Changing environment: deficiencies of the justice system, administrative arbitrage, political instability, closeness of governmental and business relationships	Coordinated application of market and non-market-based instruments clearly increases the profitability of foreign subsidiaries, particularly if it is strategically integrated with the company's central decision-making mechanism. In less volatile, stable environment this positive effect can better prevail, so the moderating effect can be observed.

Study	Independent variables (Strategy)	Dependent variables (Business Performance)	Moderating variables (Environment)	Results
	competitive position)			
Yeung et al. (2013)	Supplier relationships	Reduction of transaction and operation costs	Environmental uncertainties: changes in the frequency, timing, instability and speed of regulation	Close supplier relationships can help reduce operating costs, but it can have particularly strong impact in some specific business units / investment areas. Increasing environmental uncertainty reduces the transactional efficiency of supplier relationships.
Zahra (1996)	Technology strategy: pioneer/follower, radicality of product/process technology, product portfolio breadth, complexity, technological investments (e.g. R&D), use of external environmental technological resources, technological foresight rate	ROE, ROA	External environment: dynamism, heterogeneity, support	The technological strategy has a significant effect on the company's ROE and ROA indicators, but it is greatly affected by the environment. For the pioneer companies heterogeneous and dynamic environment suits the best, as in such conditions they can maximize their performance. Dynamic environment is also best for achieving effective results in intensive product development.
Zahra-Bogner (1999)	Technology strategy features: degree of radicality at new product developments, product development intensity, R&D spending, the use of external resources, the protection of intellectual capital	NPV, ROE, market share growth	External environment: dynamics, heterogeneity, munificent/hostile	The heterogeneity of the environment is proven to be be a moderating power, because it enhances the positive effect of the advanced technology strategy on the NPV. Environment dynamics also enhances the positive impact of radicality, intensive product development and external resources. In heterogeneous environment, the R & D developments can help to achieve significant improvements in the company's ROE even in the short run.

Source: Table made by the author

Table XIII: The conceptual approach of public and private goods

	Public goods	Private goods
Definition 1. (Samuelson, 1954 in Cullis-Jones, 1998)	Goods, which all enjoy in common, in the sense that each individual's consumption of such a good leads to no subtractions from any other individual's consumption of that good.	Their consumption can be divided among individuals.
Definition 2. (Varian, 2004)	A good that must be provided in the same quantity to all consumers. Each individual may value it differently, some may need more/some may want less.	
Definition 3. (Gallai-Török, 2005)	Goods which satisfy important needs, but systems relying on market-decision mechanism unable to produce these in the required quantity, because features of these goods make the return of the individually incurring costs as well as the generation of revenue in a market organisation impossible.	
Other terms (Samuelson, 1954 in Cullis-Jones, 1998)	Collective goods, Social goods	
Example 1. (Cullis-Jones, 1998)	National defence, jurisdiction, health care services	Apple, bread
Example 2. (Varian, 2004)	Clean air (air pollution)	Automobile, smartphone

Source: Table made by the author

Table XIV: Comparison of public and private goods based on certain microeconomic characteristics I.

	Public goods	Private goods
Divisibility (Cullis-Jones, 1998)	**No individual comsumption:** each individual may consume all of the good. The total amount consumed is the same for each individual. (Yc=Ya=Yb)	**Divisible**: The total consumption is a sum of each individual's consumption and can be split into different parts (Xc= Xa+Xb)
Rivalry in consumption 1. (Samuelson, 1954 in Cullis-Jones, 1998*)*	**Non/applicable:** a consumption of an individual can not diminish the utility of the others	**Yes/Applicable**: The consumption of an individual can reduce the utility of the others
Rivalry in consumption 2. (Sandler, 1977 in Cullis-Jones, 1998)	**Possible:** Individual A receiving e.g. medical treatment (hospital bed), causing individual B to wait, thus, A reduces the consumption and utility of B	
Definition of individual demand curves (Cullis-Jones, 1998)	Not easy to obtain reliable information, hard to reveal the preferences of community members	Recognisable, determinable, can be estimated with the help of market research and based on empirical experiences
Definition of aggregated demand (Cullis-Jones, 1998)	The **vertical summation** of individual demand curves is needed, we do not care for each individual's quantity of consumption. Its calculation is based on how much each individual would pay for the given quantity of the good, then we aggregate these reservation prices.	The **horizontal summation** of individual demand curves is needed, we follow the procedure to add the quantities that each individual demands at each price horizontally. We can determine the Pareto-optimal quantity of the good, where consumers are not willing to pay more than the cost of producing an additional unit of this good, that is just to cover that.

Source: Table made by the author

Table XV: Comparison of public and private goods based on certain microeconomic characteristics II.

	Public goods	Private goods
Excludability (Cullis-Jones, 1998)	**Absent:** Consumers cannot be excluded from the consumption benefits (only with expensive procedures), one individual cannot exclude another individual from the consumption of the good. There is no such tool, by which anyone can restrict or prohibit the consumption of given individuals.	**Possible:** The consumption of a good is possible only upon the payment of the said good's price. Anyone can be excluded from the consumption, if (e.g. because of lack of financial resources) he/she is unable to possess the property rights of the good.
Efficient production (Cullis-Jones, 1998)	Consumers have to pay different prices, although they consume the same amount.	The consumers pay the same price, and because of their income may vary they consume the good in different quantities.
Pricing 1. (Samuelson, 1954)	**It has to be discriminating** There is no any common price ratio, which applies to everyone, because the individuals' marginal rates of subtitution will differ in case of the efficiency conditions are fulfilled.	The **price discrimination** is an attribute of monopolies, meaning that the profit-maximising monopoly acts based on the marginal revenue (MR=MC).
Pricing 2. (Pete Péter in Gallai-Török, 2005)	Consumers cannot be excluded from consumption, so it is not possible to enforce payment of users like in market-based situations. Often times it is not worthy to connect the payment to customers' utilisation, because **cost are loosely related (or not related at all) to the number of consumers.**	

Source: Table made by the author

Table XVI: Comparison of public and private goods based on certain microeconomic characteristics III.

	Public goods	Private goods
Taxanomy of goods 1. (Peston, 1972, Head, 1974)	Based on rivalrous consumption and excludability **1. Pure public goods:** non-excludable and non-rivalrous in consumption **2. Pure private goods**: rivalrous in consumption and excludable **3. Rivalrous but non-excludable:** Case of the bees (Meade, 1952): When gathering nectar the acquisition of blossoms are based on rivalry, but the access of bees is not deniable. **4. Non-rivalrous, but excludable:** Admission to theatre: Tickets are exclusion techniques, but individuals admitted can utilise services without subtracting benefit from others. Clubs (Buchanan, 1965): Their capacity is limited, membership may be denied, so consumers can be excluded from the benefits of goods.	
Taxanomy of goods 2. (Buchanan, 1968)	Based on the divisibility of goods **1. Pure private goods**: fully divisible between individuals **2. Pure public goods:** fully indivisible, thus each member of the group may consume the same good (e.g. mosquito extermination) **3. Moderately divisible, shared between a small amount of people**: e.g. fire extinguisher in the corridor **4. Moderately divisible, shared between a large group of people**: e.g. vaccination – after someone gets it, he/she can provide additional protection to others **5. Indivisible, consumed by a lot of people:** e.g. swimming pool, if used by few, and not congested	
Revealing of preferencies in small groups (Cullis-Jones, 1998)	**Highly probable**: Failure to reveal demand may lead to drastically reduced supply, but the uncover of not real preferences is plausible	**Improbable:** Strategic behaviour or declaration of demand will influence equilibrium prices, so there is a strong incentive to act strategically
Revealing of preferencies in large groups (Cullis-Jones, 1998)	**Not probable:** The lack of preference revelation will have a weak impact on key elements of the system, experiments to free ride are likely to occur	**Highly probable:** Strategic behaviour or declaration of demand will not influence equilibrium prices, so there is a little incentive to fake preferences

Source: Table made by the author

Table XVII: Comparison of public and private goods based on certain microeconomic characteristics IV.

	Public goods	Private goods
Condition of optimal market operations (Cullis-Jones, 1998)	Not Pareto-optimal, if lot of consumers exist in the market.	It works well if there are numerous sellers and buyers in the market.
Relation to externalities (Varian, 2004)	**Strong correlation**, since their consumption is a special case of externalities, where everyone must consume the same amount of good, so the consumption of an individual may influence that of the others.	Consumption externalities are **not present in this case to a great extent**, since consumption of an individual do not influence the utility of others.
Individual utility (Varian, 2004)	Individual utilities are tightly intertwined, since everyone consumes the same amount.	Buyer only have to optimise their consumption, which leads us to the social optimum at the same time.
Allocation of goods (Varian, 2004)	Each individual consumes the same amount, therefore the market provision of these goods would not likely to be Pareto-efficient.	The competitive market is capable of achieving the Pareto-efficient distribution of private goods, each consumer's purchasing decisions linked to different goods will result in a Pareto-efficient consumption pattern.
Condition of Pareto-efficiency (Varian, 2004)	**Good „A" is provided in fix quantites:** the summation of willingness to pay (reservation prices) exceeds the cost of the public good **Good „B" is provided in variable quantities**: summation of marginal willingness to pay (marginal rate of substitution) should equal the marginal cost	Each individual's **marginal rate of substitution** or **marginal willingness to pay equals** the **marginal cost.**
Determination of supply (Varian, 2004)	By collective decision-making methods: e.g. command mechanisms, voting, Clarke-tax	By market mechanisms

Source: Table made by the author

Table XIX: Comparison of the idealtypical characteristics of SMEs in the public, private and family-owned sectors

Characteristic	Public Sector	Family-owned SMEs	Classical Private Sector
Main objective	Sustainment of positions' status quo	Keeping up the family and taking care of heirs	„Shareholder" value maximisation
Ideal market environment	Monopol position and/or munificent public funding	Low competitive intensity and turbulence, stable and trust-based partner relations	Predicatbility of conditions and stakeholders' behaviour
Environmental adaptation	Determined by political, regulatory and civilian stakeholders	Determined by preferences of family-members and key customers	Develops according to customer needs and competitors' behaviour
Transparency	Unique mix of mandatorily transparent and non-transparent elements of operation	Non-transparent	Transparent
Media interest	High	Low	Intermediate
Supervison/control of operation	Political, professional and financial audits	Family, professional control and taxation-checks	Professional and financial audits
Product and service portfolio	Stable	Stable	Changing
Targeted and served customer segments	„Citizens"	„Trusted key partners"	„Customers"
Degree of market orientation	Low	Intermediate	High
Organisational stucture and departmentalisation	Rigid and significant, poor fit to strategic orientation	Non-existant or rudimentary and plastic, easily changeable	Flexibly changeable according to strategy, supports interfunctional cooperations
Decision making	Centralised	Centralised	Decentralised
Formalisation of processes	Overregulated	Unregulated	Sufficiently regulated and flexible
Risk-taking of top-managers	Low	Low	High
Strategic planning	Formal and centralised	Informal and centralised	Formal and decentralised
Implementation and execution	Poor fit of functions, tasks and processes to strategic orientation	Functions, tasks and processes according to the needs of family members	Clear-cut functions, tasks and processes according to the strategic orientation
Feedback and correction	Not present/not public because of intertia and loss of prestige	Depends on the personality of the manager and the relationship of family members	Mandatory for owner accountabilty
Personality of top-manager	Bureaucratic civil servant	Professional entrepreneur	Technocrat manager
Employee values	Loyalty, diligence	Loyalty, hard work, professionalism	Performance, talent, Hard work, creativity
Primary focus of performance	Obtaining resources necessary to the operation of organisation	„Survival"	„Profit maximisation"
Most important performance dimension	Adaptability, effectiveness	Effectiveness, adaptability, efficiency	Efficiency, adaptability, effectiveness, innovtivity
Time horizon of performance measurement	Associated to political cycles	Long term	Short or long term depending on the type of investor
Profit/Loss management	Not so profitable, not making too much loss	„Break even"	„Loss is bad and should be avoided"

Source: Table made by the author

Table: XX: General English and Hungarian descriptions operationalising M&S's SOs

(A) Prospector strategic orientation	(A) Kutató stratégiai orientáció
This business unit typically operates within a broad product-market domain that undergoes periodic redefinition. The business unit values being "first in" in new product and market areas even if not all these efforts prove to be highly profitable. This organisation responds rapidly to early signals concerning areas of opportunity, and these responses often lead to a new round of competitive actions. However, this business unit may not maintain market strength in all areas it enters.	Vállalkozásunk jellemzően olyan széles termék-piaci szegmensben működik, amely rendszeres változásokon és módosításokon megy keresztül. Vállalkozásunk kiemelt értékként kezeli, amennyiben az elsők között vezethet be egy új terméket/szolgáltatást vagy vehet részt egy új fogyasztói szegmens kiszolgálásában, még akkor is, ha ezek az erőfeszítések nem bizonyulnak feltétlenül rövidtávon a leginkább jövedelmező alternatívának. Szervezetünk gyorsan reagál az üzleti környezet korai jelzéseire, igyekszik minden lehetőséget kihasználni, és intézkedéseivel befolyásolni a piaci verseny alakulását. Azonban cégünk nem mindig képes erős pozíciót és fenntartható versenyelőny-forrást szerezni azokon a piacokon, amelyekre belépett.
(B) Defender strategic orientation	**(B) Védekező stratégiai orientáció**
This business unit attempts to locate and maintain a secure niche in a relatively stable product or service area. The business unit tends to offer a more limited range of products or services than competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, and so forth. Often, this business unit is not at the forefront of developments in the industry. It tends to ignore industry changes that have no direct influence on current areas of operation and concentrates instead on doing the best job possible in a limited area.	Vállalkozásunk egy stabil fogyasztói szegmens hagyományos termékekkel és szolgáltatásokkal történő megbízható kiszolgálására törekszik. Cégünk a versenytársakhoz képest szűkebb termék és szolgáltatásportfolióval dolgozik és jelenlegi piacait, valamint versenyképességét minőségi termékekkel, magas kiszolgálási színvonallal, költséghatékony működéssel és alacsony árakkal igyekszik fenntartani. Cégünk sem az új termékek és szolgáltatások bevezetésében, sem pedig új vevői szegmentumok kiszolgálásban nem kíván vezető szerepet játszani. Gyakran figyelmen kívül hagyjuk azokat az iparági környezeti változásokat, amelyek nem gyakorolnak közvetlen hatást üzletünkre. Vállalkozásunk új termék-piaci szegmensek felkutatása helyett jelenlegi termék-piaci körének a lehető legalacsonyabb költséggel történő működtetésére koncentrál.
(C) Analyser strategic orientation	**(C) Elemző stratégiai orientáció**
This business unit attempts to maintain a stable, limited line of products or services while moving quickly to follow a carefully selected set of the more promising new developments in the industry. This organisation is seldom "first in" with new products and services. However, by carefully monitoring the actions of major competitors in areas compatible with its stable product-market base, this business unit can frequently be "second in" with a more cost-efficient product or service.	Vállalkozásunk igyekszik fenntartani egy stabil, kevésbé széleskörű termékekből és szolgáltatásokból álló kínálatot, ugyanakkor körültekintő mérlegeléssel törekszik az iparág ígéretes termék-piaci innovációinak és legújabb fejlesztéseinek átvételére is. Cégünk ritkán jelenik meg az elsők között, amikor új termékek és szolgáltatások piaci bevezetéséről esik szó. Azonban, gondosan figyelemmel követi legfőbb versenytársai lépéseit, különös tekintettel azokra a termékekre és szolgáltatásokra, amelyek összeegyeztethetők jelenlegi kínálatával. Vállalkozásunk az új termékek piacán legtöbbször a második hullámban, a követők között jelenik meg, akik gyakran költséghatékonyabb termékeket/szolgáltatásokat kínálnak a különböző vevői szegmentumok számára.
(D) Reactor strategic orientation	**(D) Reagáló stratégiai orientáció**
Our business do not appear to have a consistent product-market orientation. We primarily act to respond to competitive or other market pressures in the short term.	Vállalkozásunk az állandóan változó környezeti feltételekhez igazítja stratégiai magatartását, amely megnyilvánul mind az általunk kínált termékek és szolgáltatások gyakran változó szélességében, mélységében, valamint vevőkörünk gyakori fluktuációjában is. Ritkán vállalunk üzleti kockázatokat, a termék-piaci orientációnkat tekintve alapvetően visszahúzódóak vagyunk és a versenytársak, továbbá egyéb piaci szereplők (gyártók, nagykereskedők, szabályozó hatóságok) nyomására igyekszünk rövidtávon megfelelő döntéseket hozni. Ritkán vezetünk be elsőként új termékeket és szolgáltatásokat, legtöbbször a piaci innovációk késői elfogadói vagyunk.

Source: Table made by the author based on Slater et al. (2005)

Table XXI: Original English version of Segev's multi-item scale identifying M&S's SOs

The following statements refer to the behavioural characteristics that firms with different strategic orientations tend to exhibit. Please evaluate the degree to which they suit your firm. ***1 = The characteristic does not suit my firm at all*** ***5 = The characteristic suits my firm to a very high degree***						
Abbr.	**BEHAVIOURAL CHARACTERISTICS OF M&S STRATEGIC ORIENTATIONS**					
	DEFENDER					
DEF_1	The firm tries to locate a safe niche in a relatively stable products domain	1	2	3	4	5
DEF_2	The firm tries to maintain a safe niche in a relatively stable products domain	1	2	3	4	5
DEF_3	The firm tends to offer a narrower set of products than its competitors	1	2	3	4	5
DEF_4	The firm tries to protect the environment domain in which it operates by stressing higher quality than its competitiors	1	2	3	4	5
DEF_5	The firm tries to protect the environment domain in which it operates by stressing lower prices than its competitiors	1	2	3	4	5
DEF_6	The firm concentrates on trying to achieve best performance in a relatively narrow product/market domain	1	2	3	4	5
DEF_7	The firm places less stress on the examination of changes in the industry that are not directly relevant to the firm	1	2	3	4	5
DEF_8	The firm tries to maintain a limited line of products	1	2	3	4	5
DEF_9	The firm tries to maintain a stable line of products	1	2	3	4	5
	PROSPECTOR					
PRO_1	The firm leads in innovations in its industry	1	2	3	4	5
PRO_2	The firm operates in a broad product domain	1	2	3	4	5
PRO_3	The firm product domain is periodically redefined	1	2	3	4	5
PRO_4	The firm believes in being „first-in" in the industry in development of new products	1	2	3	4	5
PRO_5	The firm responds rapidly to early signals of opportunities in the environment	1	2	3	4	5
PRO_6	Not all the firm's efforts invested in being „first-in" in the industry in development of new products prove to be profitable	1	2	3	4	5
PRO_7	The firms's actions often lead to a new round of competitive activity in the industry	1	2	3	4	5
PRO_8	The firm maintain market strenght in all areas in which it operates	1	2	3	4	5
	ANALYSER					
ANA_1	The firm does not adopt quickly promising innovations in the industry	1	2	3	4	5
ANA_2	The firm tries to maintain a stable and limited line of products	1	2	3	4	5
ANA_3	The firm's product/market domain is characterized by continous, but moderate modifications	1	2	3	4	5
ANA_4	The innovations which are chosen by the firm are carefully examined	1	2	3	4	5
ANA_5	The firm often reacts to innovations in the industry by offering similar, lower-cost products	1	2	3	4	5
ANA_6	The firm often reacts to innovations in the industry by offering similar products at higher price/value ratio	1	2	3	4	5
ANA_7	The firm carefully monitors competitors' actions in the industry	1	2	3	4	5
ANA_8	firm only seldom leads in developing new products in the industry	1	2	3	4	5
	REACTOR					
REA_1	Comparing to its competitors in the industry, the firm is aggressive in maintaining its product/market domain	1	2	3	4	5
REA_2	The firm does not take many risks.	1	2	3	4	5
REA_3	The firm responds to areas in which pressure is made on by its environment	1	2	3	4	5
REA_4	During the last business period the firm maintained a product/market domain consistent with customer needs and preferences	1	2	3	4	5

Source: Table made by the author based on Segev (1987)

Table XXII: Supplementing the formal and content elements of Segev's multi-item scale (1987) identifying M&S's SOs with items deriving from Conant et al. scale (1990)

Scales	Wording of statements
Conant	In comparison to other companies, the services which we provide to our members are best characterised as services which are more innovative, continually changing and broader in nature throughout the organisation and marketplace. (Prospector)
Segev	The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes. (PRO_3) We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry. (PRO_4)
Conant	In contrast to other companies, my organisation has an image in the marketplace as a company, which has a reputation for being innovative and creative. (Prospector)
Segev	Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care. (PRO_1)
Conant	The amount of time my firm spends on monitoring changes and trends in the marketplace can be best described as minimal: We really do not spend much time monitoring the marketplace. (Defender)
Segev	Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation. (DEF_7)
Conant	In comparison to other companies, the increases or losses in demand which we have experienced are due most probably to: Our practice of concentrating on more fully developing those markets which we currently serve. (Defender)
Segev	The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services. (DEF_6)
Conant	One of the most important goals in this company in comparison to other firms, is our dedication and commitment to making sure that we guard against critical threats by taking whatever action is necessary. (Reactor)
Segev	Our pharmacy often acts upon the direct pressures of the market and regulatory environments. (REA_3)
Conant	The one thing that protects my organisation from other companies is that we: Are able to carefully analyse emerging trends and adopt only those which have proven potential. (Analyser)
Segev	Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market. (ANA_4)
Conant	More so than other companies, our management staff tends to concentrate on analysing opportunities in the marketplace and selecting only those opportunities with proven potential, while protecting a secure financial position. (Analyser)
Segev	Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications. (ANA_1) Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market. (ANA_2) Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market. (ANA_8)
Conant	In contrast to many other companies, my organisation prepares for future by identifying trends and opportunities in the marketplace which can result in a creation of service offerings or programs which are new to the industry or which reach new markets. (Prospector)
Segev	Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care. (PRO_1)
Conant	In contrast to many other companies, my organisation prepares for future by identifying those problems which, if solved, will maintain and then improve our current service offerings and market position. (Defender)
Segev	Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors. (DEF_4)

Source: Table made by the author

Table XXIII: Problematic items of Segev scale identified during the „card matching tasks"

Code	Wording of the scale items	Classification	Reasoning
REA_1	Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments	DEF, REA, ANA	Typical behavioural pattern of most pharmacies with the exception of Prospectors
REA_2	Our pharmacy seldom takes business risks	REA, DEF, ANA	It can be typical to every pharmacy with the exception of expanding and/or financially strong ones
REA_3	Our pharmacy often acts upon the direct pressures of the market and regulatory environments	DEF, ANA REA	It absolutely suits to all pharmacies pursuing rather retractive strategic orientations
REA_4	In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients	PRO, ANA	Financially stable or pharmacists operating their business in an irresponsible way can afford to „experiment"
ANA_5	Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price	PRO	By facing the word „new" they immediately associated to Prospectors
ANA_6	Compared to our competitors our pharmacy offers novelties with higher quality patient care and accompanied by more additional services	DEF	It is necessary to retain conventional loyal patient segments
PRO_6	It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable	P, A, D, R	It can suit to all pharmacies following any kind of M&S's strategic orientations
PRO_7	Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us	None of them	Pharmacies are not influential enough to do so, it is not even found among the goals of a pharmacy, moreover competitive intensity is difficult to interpret in certain contexts
PRO_8	Our pharmacy has competitive advantage in all product and service domains that it offers	None of them	It is not typical to any strategic orientations pursued by pharmacies
DEF_7	Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation	Any of them	Pharmacists are exhausted and „overloaded", thus they can not pay attention to other environmental factors

Source: Table made by the author

Table XXIV: The Segev scale identifying M&S's SOs – final version applied in the survey

The following statements refer to the strategic behaviour of your pharmacy. The statements below affect the basic aspects of pharmacy management, e.g. product and service portfolio, market introduction of new products, served patient segments, applied competitive tools, etc. Services refer to all examinations, consultations, and additional activities (home delivery, measurement by a medical equipment) offered in a pharmacy that do not directly connect to the dispensing of drugs or other goods sold in a pharmacy. All services provided within the institutional framework of pharmaceutical care belong here, as well. **Please evaluate on a five-point scale to what extent the following statements are suit the general business practice of your pharmacy.** *(1 = It does not suit our pharmacy at all, 5 = It totally suits our pharmacy)*	
STRATEGY „A"	
Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments. (DEF_1)	1 2 3 4 5
Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently. (DEF_2)	1 2 3 4 5
Compared to competitors our pharmacy offers a narrower range of products and services. (DEF_3)	1 2 3 4 5
Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors. (DEF_4)	1 2 3 4 5
To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors. (DEF_5)	1 2 3 4 5
The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services. (DEF_6)	1 2 3 4 5
Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation. (DEF_7)	1 2 3 4 5
Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care. (DEF_8)	1 2 3 4 5
Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications. (DEF_9)	1 2 3 4 5
STRATEGY „B"	
Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care. (PRO_1)	1 2 3 4 5
Compared to our competitors our pharmacy offers a wider variety of pharmaceutical products and services. (PRO_2)	1 2 3 4 5
The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes. (PRO_3)	1 2 3 4 5
We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry. (PRO_4)	1 2 3 4 5
Our pharmacy reacts quickly to early signals of business opportunities discovered in the changes of market and regulatory environments. (PRO_5)	1 2 3 4 5

It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable. (PRO_6).	1 2 3 4 5
Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us. (PRO_7)	1 2 3 4 5
Our pharmacy has competitive advantage in all product and service domains that it offers. (PRO_8)	1 2 3 4 5
STRATEGY „C”	
Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications. (ANA_1)	1 2 3 4 5
Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market. (ANA_2)	1 2 3 4 5
The products and services offered by our pharmacy are characterised by continuous but moderate changes. (ANA_3)	1 2 3 4 5
Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market. (ANA_4)	1 2 3 4 5
Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price. (ANA_5)	1 2 3 4 5
Compared to our competitors our pharmacy offers novelties with higher quality patient care and accompanied by more additional services. (ANA_6)	1 2 3 4 5
Our pharmacy keeps a close eye on and carefully monitors actions taken by competitor pharmacies. (ANA_7)	1 2 3 4 5
Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market. (ANA_8)	1 2 3 4 5
STRATEGY „D”	
Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments. (REA_1)	1 2 3 4 5
Our pharmacy seldom takes business risks. (REA_2)	1 2 3 4 5
Our pharmacy often acts upon the direct pressures of the market and regulatory environments. (REA_3)	1 2 3 4 5
In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients. (REA_4)	1 2 3 4 5

Source: Table made by the author

Table XXV: Wording of descriptions featured in self-typing paragraph method applied for identifying SOs of M&S

(A) Prospector strategic orientation
Compared to its competitors our pharmacy offers a wide range of products and services that undergoes frequent changes. Our enterprise attends to numerous patient segments, while continuously pursuing the identification and proactive influence of latent customer needs. We consider it as a priority value when our pharmacy is among the first to introduce new products or pharmaceutical services. We are proud of being able to address new patient segments or to implement modern business applications or technological innovations before others. We don not mind if in the short run these efforts are not profitable. Our pharmacy is quick to react to the early signals of business, pharmaceutical and regulatory environments, and tries to take advantage of all opportunities and influence market competition to its own benefit. However, our pharmacy is not always capable of taking a stable position and a sustainable competitive advantage in all product/service categories and consumer segments it operates in.
(B) Defender strategic orientation
The aim of our pharmacy is to provide reliable service by selling conventional products and pharmaceutical services to its existing patient segments characterised by less diverse needs and preferences. It is our top priority to keep operating expenses at a low level. Compared to our competitors our pharmacy offers a narrower product and service portfolio. The high quality patient service, cost efficient operation and lower prices help in maintaining our competitive advantage and market share. We often disregard changes occuring in the external environment that have no direct influence on our day-to-day operation. The aim of our pharmacy is neither to be among the first to introduce new products, pharmaceutical services and to implement new business applications, nor to take a leading role in addressing and serving new patient segments. Instead, the aim is to successfully take advantage of the opportunities provided by the existing products/services and exploit the potential inherent in our current patient segments.
(C) Analyser strategic orientation
Our pharmacy simultaneously tries to keep a stable supply of less varied products and pharmaceutical services free of changes, while after careful consideration it attempts to take in promising innovations of the industry. Our pharmacy is seldom among the first when talking about the introduction of new products or pharmaceutical services to the market, the implementation of modern business applications, or when addressing underserved patient segments. We carefully monitor the actions taken by our competitors, and we thoroughly think over the compatibility of new lines of products, services and business applications before taking the chance of introducing any of them to the market. Our pharmacy is usually in the second wave, among the followers when it comes to the introduction of new products and services, usually offering higher quality or less expensive alternatives that fit better with the patient needs and preferences.
(D) Reactor strategic orientation
Our pharmacy adjusts its management practices to the ever changing market conditions. This reflects in the often changing variety and depth of the products and pharmaceutical services offered by us, as well as the frequently changing composition of our patient segments. As far as our business philosophy is concerned we are retractable, trying to make appropriate short term decisions based on the influence of patients, competitors and other market players (producers, wholesalers, advocacies, regulatory authorities and physicians). We try to follow the constantly changing needs and preferences of our patient segments. Our main goal is to have enough revenue to cover the incurring costs. Our pharmacy has a risk-aversive attitude, we seldom introduce new products and services, more often we are accepting market innovations at a later phase.

Source: Table made by the author

Table XXVI: Operationalisating the construct of PEU via the industry-specific adaptation of multi-item scale developed by M&S (1978)

The following statements refer to the environmental conditions of pharmacy management. We are interested in your evaluation pertaining to the degree you perceive either predictable or unpredictable the environment of pharmacy operation. We kindly ask you to indicate to what extent you regard environmental factors and behavioural aspects of key stakeholders featured below as either predictable or unpredictable. Value 1 of the 5 point Likert-scale stands for *„completely unpredictable",* while value 5 indicates *„completely predictable"*					
ENVIRONMENTAL STAKEHOLDERS/FACTORS	**Unpredictable**				**Predictable**
WHOLESALERS (PEU_WHS)					
Prices and price changes of wholesalers (PEU_WHS_1)	1	2	3	4	5
Shipping and delivery routine of wholesalers (PEU_WHS_2)	1	2	3	4	5
Payment terms and conditions of wholesalers (PEU_WHS_3)	1	2	3	4	5
Additional services of wholesalers (PEU_WHS_4)	1	2	3	4	5
Discounts provided by wholesalers and their degree (PEU_WHS_5)	1	2	3	4	5
PRODUCERS (PEU_PROD)					
Pricing routines of producers and their rate of change (PEU_PROD_1)	1	2	3	4	5
Quality of the goods of the producers (PEU_PROD_2)	1	2	3	4	5
Other parameters of producers' products (e.g. packaging, packing, dosage, branding, flavor etc.) (PEU_PROD_3)	1	2	3	4	5
Market entry of producers' products (PEU_PROD_4)	1	2	3	4	5
Additional services of producers (PEU_PROD_5)	1	2	3	4	5
PATIENTS (PEU_PAT)					
Demand of patients for current products and services (PEU_PAT_1)	1	2	3	4	5
Demand of patients for new, future products and services (PEU_PAT_2)	1	2	3	4	5
Preference of patients towards generic substitute products (PEU_PAT_3)	1	2	3	4	5
Purchasing patterns of patients (e.g. timing, frequency, price sensitivity etc.) (PEU_PAT_4)	1	2	3	4	5
Patients' tastes and preferences regarding products and services (PEU_PAT_5)	1	2	3	4	5
Expectations of patients concerning the service-encounter in a pharmacy (PEU_PAT_6)	1	2	3	4	5
COMPETITOR PHARMACIES (PEU_COMP)					
Pricing routines and price changes of competitor pharmacies (PEU_COMP_1)	1	2	3	4	5
Composition of product and service portfolio of competitor pharmacies (PEU_COMP_2)	1	2	3	4	5
Quality of products and services offered by competitor pharmacies (PEU_COMP_3)	1	2	3	4	5
Quality of patient-serving at competitor pharmacies (PEU_COMP_4)	1	2	3	4	5
Launch of new products and services of competitor pharmacies to the market (PEU_COMP_5)	1	2	3	4	5
Content and intensity of competitor pharmacies' marketing activity (PEU_COMP_6)	1	2	3	4	5
Timing and content of promotions, sales, discounts offered by competitor pharmacies (PEU_COMP_7)	1	2	3	4	5
REGULATORY AUTHORITIES (Ministry, NHIFH, NPHMOS etc.) (PEU_REG)					
Changes concerning prices, realisable profit margins, bands and limits of subsidies etc. (PEU_REG_1)	1	2	3	4	5
Changes concerning the composition of drugs subsidised by the state and the degree of these subsidies (PEU_REG_2)	1	2	3	4	5
Changes concerning specifications of quality standards of products and services (PEU_REG_3)	1	2	3	4	5
Changes of law regulations regarding the professional aspects of	1	2	3	4	5

pharmacy personnel's employment (PEU_REG_4)					
Changes in regulation of pharmacies' marketing activities (PEU_REG_5)	1	2	3	4	5
Changes in fundamental issues of pharmacy operations (ownership structure, corporate law form, constraints of foundation, cooperations machanisms etc.) (PEU_REG_6)	1	2	3	4	5
Changes concerning sales channels of drugs (PEU_REG_7)	1	2	3	4	5
Changes concerning the width and depth of products and services available in pharmacies (PEU_REG_8)	1	2	3	4	5
Changes concerning the education and training of pharmacists and (professional) assistants (PEU_REG_9)	1	2	3	4	5
HUNGARIAN CHAMBER OF PHARMACISTS (PEU_MGYK)					
Ethical norms and regulations defined by the chamber of pharmacists (PEU_MGYK_1)	1	2	3	4	5
Content elements of lobby activity of the Chamber towards the government (PEU_MGYK_2)	1	2	3	4	5
Effectiveness of lobby activity of the Hungarian Chamber of Pharmacists towards the government (PEU_MGYK_3)	1	2	3	4	5
Professional standpoints and recommendations of the Chamber (PEU_MGYK_4)	1	2	3	4	5
Standpoints and recommendations of the Hungarian Chamber of Pharmacists regarding pharmacy management (PEU_MGYK_5)	1	2	3	4	5
FINANCIAL CONDITIONS (PEU_FIN)					
Short term possibilities of borrowing (e.g. for current assets) (PEU_FIN_1)	1	2	3	4	5
Long term possibilities of borrowing (e.g. for development) (PEU_FIN_2)	1	2	3	4	5
Evolution of interest rate on loans (PEU_FIN_3)	1	2	3	4	5
Fluctuation of exchange rates (PEU_FIN_4)	1	2	3	4	5
Formation of payment conditions and deadlines (PEU_FIN_5)	1	2	3	4	5
Cost of hiring pharmacy employees (PEU_FIN_6)	1	2	3	4	5
Fluctuation of real-estate rental prices (PEU_FIN_7)	1	2	3	4	5
Evolution of utility costs (PEU_FIN_8)	1	2	3	4	5

Source: Table made by the author

Table XXIX: Regional distribution of sample and respondents

	Number of pharmacies (N)	Distribution in the country (%)	Distribution in the sample frame (%)	Number of answers (n)	Respondents' proportion to sample size (%)	Response rate by region (%)
Budapest	424	17,7	43,2	38	18,3	8,9
Pest	261	10,9	26,6	111	53,6	42,5
Baranya	99	4,1	10	20	9,6	20,2
BAZ	153	6,4	15,6	28	13,5	18,3
Vas	46	1,9	4,6	12	5,8	26
Sample frame	983	41				
Others	1408	59				
Total	2391	100	100	207	100	

Source: Table made by the author

Table XXX: Description of the sample by main socio-demographic characteristics

Is the pharmacy owned only by pharmacists?	**Distribution (%)**	**(n)**
Only pharmacists	46,8	97
Not only pharmacists	50,2	103
No response	3	7
Do the owners of the pharmacy come from family members and/or friends?	**Distribution (%)**	**(n)**
Family/Friends	72,4	150
Non-family/friends	23,2	48
No response	4,4	9
Are there any wholesalers among the owners of the pharmacy?	**Distribution (%)**	**(n)**
Yes	1,5	2
No	95,1	197
No response	4,4	8
Are there any profession-related investors (e.g. physician) among the owners of the pharmacy?	**Distribution (%)**	**(n)**
Yes	5,9	13
No	90,6	186
No response	3,4	8
Are there any financial investors among the owners of the pharmacy?	**Distribution (%)**	**(n)**
Yes	14,3	30
No	82,8	171
No response	2,9	6
Does the pharmacy operate as a member of a pharmacy chain?	**Distribution (%)**	**(n)**
Yes	8,4	18
No	88,7	182
No response	2,9	7
Do the owners have shares in other pharmacies as well?	**Distribution (%)**	**(n)**
Yes	10,6	22
No	84,6	175
No response	4,8	10
Is the pharmacy associated with any strategic cooperation led by a wholesaler? (e.g. Gyöngypatika, Szimpatika)	**Distribution (%)**	**(n)**
Yes	49,3	102
No	47,8	98
No response	2,9	7
Does the pharmacy take part in any kind of procurement association?	**Distribution (%)**	**(n)**
Yes	26,6	55
No	69,5	144
No response	3,9	8
What is the corporate law form of the pharmacy?	**Distribution (%)**	**(n)**
Private company	6,4	13
Limited partnership	63,5	131
Limited liability company (Ltd.)	26,6	55

Joint stock company	1	2
No response	2,5	6
The past of the pharmacy:	**Distribution (%)**	**(n)**
Pharmacy with no predecessor in title	42,4	88
Privatised pharmacy	40,9	84
Pharmacy had more than one owners	13,3	28
No response	3,4	7
Where does the pharmacy operate?	**Distribution (%)**	**(n)**
Capital (Budapest)	18,4	38
City with more than 50000 residents	10,6	22
Town with number of residents between 10000-50000 residents	27,5	57
Township with number of residents between 5000-10000	18,4	38
Settlement with less than 5000 residents	25,1	52
No response	100	207

Source: Table made by the author

Table XXXI: Compliance with the application criteria of SEM: Number of observations

APPLICATION CRITERIA	MULTI-ITEM SCALES			
	Perceived environmental uncertainty (Miles-Snow, 1978)		Strategic orientations of M&S (Segev, 1987)	
Number of observations	207		207	
Number of latent constructs	7		4	
Number of indicator variables	45		29	
Number of error terms	45		29	
Number of estimated parameters	97		62	
n/q>5 (Bentler-Chou, 1987)	207/97=2.13	No compliance with criteria	207/62=3.33	No compliance with criteria
n-q>50 (Bagozzi, 1981)	207-97=110	Compliance with criteria	207-62=145	Compliance with criteria
n>200 (Hair et al., 2010)	207	Compliance with criteria	207	Compliance with criteria

Source: Table made by the author

Table XXXII: Multivariate techniques used to test our research questions and hypotheses

Question/ Hypothesis	Applied mathemathical-statistical methodologies
Q1	Self-typing paragraphs and objective indicators method, exploratory (EFA) and confirmatory factor analyses (CFA) of the multi-item Segev scale
Q2	Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), ANOVA, post-hoc paired comparisons by Tukey-, Scheffe- and Bonferroni-tests
Q3	Crosstabs, McNemar-tests
Q4	Paired sampled t-tests
Q5	Crosstabs, correlations, ANOVA, structural equation modeling (SEM)
Q6	Crosstabs, correlations, ANOVA
Q7	Crosstabs, correlations, ANOVA, SEM
H1	ANOVA, hierarchical interaction and multigroup moderated regression, SEM
H2	ANOVA, hierarchical interaction and multigroup moderated regression, SEM
H3	Hierarchical interaction and multigroup moderated regressions, multigroup and interaction moderation (SEM)
H4	Hierarchical interaction and multigroup moderated regressions, multigroup and interaction moderations (SEM)
H5	Hierarchical interaction and multigroup moderated regressions, multigroup and interaction moderations (SEM)
H6	Hierarchical interaction and multigroup moderated regressions, multigroup and interaction moderations (SEM)
H7	Moderated moderation (SEM)
H8	Moderated moderation (SEM)
H9	Moderated moderation (SEM) by integrating control variables pertaining to socio-demographic factors and characteristics of the site of pharmacies

Source: Table made by the author

Table XXXIII: 3 and 4 factor structure solutions as resulting from EFA of Segev scale

Original 4 factor solution (strategic orientations)								**3 factor solution (strategic orientations)**					
1. factor		*2. factor*		*3. factor*		*4. factor*		*1. factor*		*2. factor*		*3. factor*	
Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings
PRO_1	0,911	ANA_3	0,902	DEF_9	0,847	DEF_8	0,859	PRO_1	0,922	DEF_6	0,814	ANA_3	0,929
PRO_5	0,886	ANA_2	0,874	DEF_1	0,838	DEF_3	0,821	PRO_5	0,890	DEF_2	0,810	ANA_4	0,897
PRO_2	0,875	ANA_5	0,864	DEF_2	0,821	DEF_7	0,685	PRO_2	0,887	DEF_9	0,806	ANA_2	0,897
PRO_3	0,839	ANA_4	0,823	DEF_4	0,791	DEF_6	0,681	PRO_4	0,837	DEF_8	0,798	ANA_5	0,844
PRO_4	0,831	ANA_1	0,804	REA_1	0,766			PRO_3	0,824	DEF_1	0,791	ANA_1	0,723
PRO_8	0,804	ANA_8	0,787	REA_3	0,651			PRO_8	0,803	DEF_7	0,768	ANA_8	0,707
PRO_7	0,799	DEF_5	0,789	REA_2	0,545			PRO_7	0,781	DEF_3	0,765	DEF_5	0,680
PRO_6	0,639	ANA_7	0,615					REA_4	0,625	DEF_4	0,699	ANA_6	0,658
REA_4	0,620	ANA_6	0,535					PRO_6	0,621	REA_1	0,688	ANA_7	0,618
										REA_2	0,651		
										REA_3	0,647		
Extraction method: Principal Component Analysis (PCA)								Extraction method: Principal Component Analysis (PCA)					
Rotation: Varimax								Rotation: Varimax					
Variance explained by factor	18,06%		15,25%		13,60%		9,55%	Variance explained by factor	18,08%		16,92%		16,66%
Total variance explained	56,47							Total variance explained	51,68%				

Source: Table made by the author

Table XXXIV: 5 and 2 factor structure solutions resulting from EFA of Segev scale

5 factor solution (strategic orientations)										**2 factor solution (strategic orientations)**			
1. factor		*2. factor*		*3. factor*		*4. factor*		*5. factor*		*1. factor*		*2. factor*	
Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings
PRO_1	0,912	ANA_3	0,895	DEF_9	0,873	DEF_8	0,883	None of the statements had the biggest F. Weight in this case (!)		PRO_2	0,854	ANA_4	0,862
PRO_5	0,890	ANA_5	0,892	DEF_1	0,866	DEF_3	0,834			PRO_1	0,815	ANA_3	0,853
PRO_2	0,879	ANA_2	0,862	REA_1	0,864	DEF_7	0,800			PRO_5	0,808	ANA_2	0,803
PRO_4	0,835	ANA_4	0,841	DEF_2	0,730	DEF_6	0,786			PRO_4	0,770	ANA_5	0,741
PRO_3	0,835	ANA_1	0,761	REA_2	0,645					DEF_3	-0,737	DEF_4	0,718
PRO_8	0,797	DEF_5	0,745	DEF_4	0,642					PRO_3	0,735	DEF_5	0,684
PRO_7	0,775	ANA_8	0,744	REA_3	0,593					PRO_8	0,735	ANA_6	0,682
PRO_6	0,692	ANA_7	0,651							DEF_1	-0,708	ANA_1	0,669
REA_4	0,668	ANA_6	0,581							REA_2	-0,703	ANA_7	0,647
										DEF_8	-0,689	ANA_8	0,628
										PRO_7	0,674	REA_3	0,535
										DEF_9	-0,667		
										REA_1	-0,645		
										REA_4	0,630		
										DEF_6	-0,584		
										DEF_2	-0,544		
										DEF_7	-0,538		
										PRO_6	0,451		
Extraction method: Principal Component Analysis (PCA)										Extraction method: Principal Component Analysis (PCA)			
Rotation: Varimax										Rotation: Varimax			
Variance explained by factor	17,80%		15,54%		12,28%		10,51%		5,034%	Variance explained by factor	23,35%		18,74%
Total variance explained	61,18%									Total variance explained	42,095%		

Source: Table made by the author

Table XXXV: Exploratory factor analysis of M&S's PEU scale

Original 7-factor solution (Key stakeholders and external conditions)													
1. factor		*2. factor*		*3. factor*		*4. factor*		*5. factor*		*6. factor*		*7. factor*	
Wholesalers		*Producers*		*Patients*		*Competitor pharmacies*		*Regulatory authorities*		*Hungarian Chamber of Pharmacists*		*Financial conditions*	
Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings	Items	Factor loadings
WHS_3	0,787	PROD_3	0,766	PAT_5	0,768	2	0,851	REG_7	0,808	MGYK_4	0,868	FIN_3	0,760
WHS_2	0,737	PROD_5	0,692	PAT_4	0,757	4	0,831	REG_4	0,779	MGYK_2	0,847	FIN_2	0,731
WHS_4	0,717	PROD_4	0,671	PAT_1	0,659	3	0,822	REG_8	0,761	MGYK_5	0,841	FIN_8	0,723
WHS_5	0,676	PROD_1	0,669	PAT_2	0,598	1	0,787	REG_6	0,753	MGYK_3	0,721	FIN_4	0,694
WHS_1	0,465	PROD_2	0,605	PAT_3	0,557	6	0,754	REG_5	0,735	MGYK_1	0,661	FIN_1	0,693
				PAT_6	0,535	5	0,751	REG_9	0,651			FIN_6	0,626
						7	0,718	REG_3	0,620			FIN_5	0,608
								REG_2	0,491			FIN_7	0,582
								REG_1	0,477				
Extraction method: Principal Component Analysis (PCA)								Extraction method: Principal Component Analysis (PCA)					
Rotation: Varimax								Rotation: Varimax					
Variance explained by factor	10,88%		10,49%		9,31%		7,81%		7,16%		7,09%		6,53%
Total variance explained	59,304%												

Source: Table made by the author

Table XXXVI: Fit indices of confirmatory factor analysis of Segev scale

CFA: STRATEGIC ORIENTATIONS OF MILES&SNOW (SEGEV, 1987)				
Fit indices	Threshold value for acceptance	Empirical value		Evaluation
		3 factor	4 factor	
CMIN/d.f.	≤2 (Byrne, 1989) ≤3 (Bentler-Bonett, 1980) ≤5 (Marsch-Hocevar, 1985)	1,968	3,161	Criteria met
RMSEA	≤0,06 (Hu-Bentler, 1999) ≤0,07 (Hair et al., 2010) ≤0,08 (MacCallum, 1996)	0,069	0,102	Criteria met
CFI	≥0,9 (Homburg-Baumgartner, 1996)	0,903	0,723	Criteria met
NFI	≥0,9 (Homburg-Baumgartner, 1996)	0,896	0,705	Criteria met
TLI	≥0,9 (Homburg-Baumgartner, 1996)	0,901	0,717	Criteria met
GFI	≥0,9 (Homburg-Baumgartner, 1996)	0,891	0,693	Criteria met

Source: Table made by the author

Table XXXVII: Fit indices of confirmatory factor analysis of PEU scale

CFA: PERCEIVED ENVIRONMENTAL UNCERTAINTY (Miles-Snow, 1978)			
Fit indices	Threshold values for acceptance	Empirical value	Evaluation
CMIN/d.f.	≤2 (Byrne, 1989) ≤3 (Bentler-Bonett, 1980)	1,495	Criteria met
RMSEA	≤0,06 (Hu-Bentler, 1999) ≤0,07 (Hair et al., 2010)	0,05	Criteria met
CFI	≥0,9 (Homburg-Baumgartner, 1996)	0,925	Criteria met
NFI	≥0,9 (Homburg-Baumgartner, 1996)	0,918	Criteria met
TLI	≥0,9 (Homburg-Baumgartner, 1996)	0,921	Criteria met
GFI	≥0,9 (Homburg-Baumgartner, 1996)	0,904	Criteria met

Source: Table made by the author

Table XXXVIII: Confirmatory factor structure of SOs relevant in the Hungarian public retail drug supply based on Segev's (1987) scale

Factor	Scale items	Factor loadings	Textual wording of scale items
1. factor: Prospector strategic orientation	PRO_1	0,930	Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care
	PRO_2	0,927	Compared to our competitors our pharmacy offers a wider variety of pharmaceutical products and services
	PRO_5	0,881	Our pharmacy reacts quickly to early signals of business opportunities discovered in the changes of market and regulatory environments
	PRO_4	0,850	We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry
	PRO_3	0,719	The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes.
	PRO_8	0,753	Our pharmacy has competitive advantage in all product and service domains that it offers
	PRO_7	0,683	Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us
	REA_4	0,661	In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients
	PRO_6	0,544	It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable
2. factor: Defender/Reactor strategic orientation	DEF_1	0,905	Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments
	DEF_9	0,885	Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications
	DEF_6	0,776	The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services
	DEF_2	0,775	Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently
	DEF_7	0,739	Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation.
	DEF_8	0,671	Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care
	DEF_3	0,670	Compared to competitors our pharmacy offers a narrower range of products and services
	DEF_4	0,666	Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors
	REA_1	0,645	Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments.
	REA_2	0,616	Our pharmacy seldom takes business risks
	REA_3	0,562	Our pharmacy often acts upon the direct pressures of the market and regulatory environments
3. factor: Analyser strategic orientation	ANA_3	0,932	The products and services offered by our pharmacy are characterised by continuous but moderate changes
	ANA_4	0,883	Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market
	ANA_2	0,857	Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market
	ANA_5	0,780	Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price
	ANA_1	0,662	Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications
	ANA_8	0,635	Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market
	DEF_5	0,660	To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors
	ANA_6	0,640	Compared to our competitors our pharmacy offers novelties with higher quality patient care and accompanied by more additional services
	ANA_7	0,638	Our pharmacy keeps a close eye on and carefully monitors actions taken by competitor pharmacies

Source: Table made by the author

Table XXXIX: Confirmatory factor structure of PEU scale in HPRDS I.

Factor	Scale items	Factor loadings	Textual wording of the scale items
WHOLESALERS	PEU_WHS_1	0,574	Prices and price changes of wholesalers
	PEU_WHS_2	0,761	Shipping and delivery routine of wholesalers
	PEU_WHS_3	0,819	Payment terms and conditions of wholesalers
	PEU_WHS_4	0,818	Additional services of wholesalers
	PEU_WHS_5	0,775	Discounts provided by wholesalers and their degree
PRODUCERS	PEU_PROD_1	0,666	Pricing routines of producers and their rate of change
	PEU_PROD_2	0,720	Quality of the goods of the producers
	PEU_PROD_3	0,810	Other parameters of producers' products (e.g. packaging, packing, dosage, branding, flavor etc.)
	PEU_PROD_4	0,837	Market entry of producers' products
	PEU_PROD_5	0,807	Additional services of producers
PATIENTS	PEU_PAT_1	0,763	Demand of patients for current products and services
	PEU_PAT_2	0,667	Demand of patients for new, future products and services
	PEU_PAT_3	0,695	Preference of patients towards generic substitute products
	PEU_PAT_4	0,896	Purchasing patterns of patients (e.g. timing, frequency, price sensitivity etc.)
	PEU_PAT_5	0,840	Patients' tastes and preferences regarding products and services
	PEU_PAT_6	0,587	Expectations of patients concerning the service-encounter in a pharmacy
COMPETITOR PHARMACIES	PEU_COMP_1	0,907	Pricing routines and price changes of competitor pharmacies
	PEU_COMP_2	0,956	Composition of product and service portfolio of competitor pharmacies
	PEU_COMP_3	0,916	Quality of products and services offered by competitor pharmacies
	PEU_COMP_4	0,918	Quality of patient-serving at competitor pharmacies
	PEU_COMP_5	0,826	Launch of new products and services of competitor pharmacies to the market
	PEU_COMP_6	0,832	Content and intensity of competitor pharmacies' marketing activity
	PEU_COMP_7	0,819	Timing and content of promotions, sales, discounts offered by competitor pharmacies

Source: Table made by the author

Table XL: Confirmatory factor structure of PEU scale in HPRDS II.

Factor	Scale items	Factor loadings	Textual wording of scale items
REGULATORY AUTHORITIES	PEU_REG_1	0,671	Changes concerning prices, realisable profit margins, bands and limits of subsidies etc.
	PEU_REG_2	0,684	Changes concerning the composition of drugs subsidised by the state and the degree of these subsidies
	PEU_REG_3	0,713	Changes concerning specifications of quality standards of products and services
	PEU_REG_4	0,867	Changes of law regulations regarding the professional aspects of pharmacy personnel's employment
	PEU_REG_5	0,850	Changes in regulation of pharmacies' marketing activities
	PEU_REG_6	0,861	Changes in fundamental issues of pharmacy operations (ownership structure, corporate law form, constraints of foundation, cooperations machanisms etc)
	PEU_REG_7	0,850	Changes concerning sales channels of drugs
	PEU_REG_8	0,823	Changes concerning the width and depth of products and services available in pharmacies
	PEU_REG_9	0,660	Changes concerning the education and training of pharmacists and (professional) assistants
HUNGARIAN CHAMBER OF PHARMACISTS	PEU_MGYK_1	0,734	Ethical norms and regulations defined by the chamber of pharmacists
	PEU_MGYK_2	0,912	Content elements of lobby activity of the Chamber towards the government
	PEU_MGYK_3	0,790	Effectiveness of lobby activity of the Hungarian Chamber of Pharmacists towards the government
	PEU_MGYK_4	0,906	Professional standpoints and recommendations of the Chamber
	PEU_MGYK_5	0,964	Standpoints and recommendations of the Hungarian Chamber of Pharmacists regarding pharmacy management
FINANCIAL CONDITIONS	PEU_FIN_1	0,795	Short term possibilities of borrowing (e.g. for current assets)
	PEU_FIN_2	0,837	Long term possibilities of borrowing (e.g. for development)
	PEU_FIN_3	0,863	Evolution of interest rate on loans
	PEU_FIN_4	0,764	Fluctuation of exchange rates
	PEU_FIN_5	0,722	Formation of payment conditions and deadlines
	PEU_FIN_6	0,705	Cost of hiring pharmacy employees
	PEU_FIN_7	0,659	Fluctuation of real-estate rental prices
	PEU_FIN_8	0,731	Evolution of utility costs

Source: Table made by the author

Table XLI: Strength of relationships between latent constructs of Segev scale

CFA: M&S'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 3 FACTOR			
Latent constructs		**Covariance**	**Correlation**
Prospector	Defender/Reactor	-0,211	-0,358
Prospector	Analyser	0,083	0,214
Analyser	Defender/Reactor	0,182	0,294
CFA: M&S'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 4 FACTOR			
Prospector	Defender	-0,329	-0,357
Prospector	Analyser	0,110	0,163
Prospector	Reactor	-0,463	-0,503
Defender	Analyser	0,154	0,249
Defender	Reactor	0,759	0,900
Analyser	Reactor	0,103	0,166

Source: Table made by the author

Table XLII: Strength of relationships between latent constructs of PEU scale

CFA: PERCEIVED EVIRONMENTAL UNCERTAINTY							
Latent constructs		**cov.**	**corr.**	**Latent constructs**		**cov.**	**corr.**
Wholesalers	Producers	0,100	0,196	Patients	Competitors	0,177	0,402
Wholesalers	Patients	0,118	0,349	Patients	Regulatory authorities	0,059	0,205
Wholesalers	Competitors	0,102	0,174	Patients	Hungarian Chamber of Pharmacists	0,054	0,211
Wholesalers	Regulatory authorities	0,032	0,066	Patients	Financial conditions	0,123	0,382
Wholesalers	Hungarian Chamber of Pharmacists	0,020	0,046	Competitors	Regulatory authorities	0,032	0,063
Wholesalers	Financial conditions	0,168	0,312	Competitors	Hungarian Chamber of Pharmacists	0,048	0,107
Producers	Patients	0,089	0,291	Competitors	Financial conditions	0,202	0,359
Producers	Competitors	0,091	0,170	Regulatory authorities	Hungarian Chamber of Pharmacists	0,159	0,430
Producers	Regulatory authorities	0,179	0,408	Regulatory authorities	Financial conditions	0,163	0,352
Producers	Hungarian Chamber of Pharmacists	0,127	0,325	Hungarian Chamber of Pharmacists	Financial conditions	0,098	0,238
Producers	Financial conditions	0,113	0,231				

Source: Table made by the author

Table XLIII: Comparing the CFA results of Segev scale with and without fixed covariance values between latent constructs

CFA: M&S'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 3 FACTOR			
Fit indices	**Value based on the original CFA model**	**Value in case of fixed connection (Cov=1) between latent constructs**	**Evaluation**
CMIN/d.f.	1,968	2,456	Weakened
CFI	0,903	0,822	Weakened
RMSEA	0,069	0,084	Weakened
NFI	0,896	0,711	Weakened
TLI	0,901	0,719	Weakened
GFI	0,891	0,687	Weakened
CFA: M&S'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 4 FACTOR			
CMIN/d.f.	3,161	3,802	Weakened

CFI	0,723	0,635	Weakened
RMSEA	0,102	0,117	Weakened
NFI	0,705	0,598	Weakened
TLI	0,717	0,602	Weakened
GFI	0,693	0,581	Weakened

Source: Table made by the author

Table XLIV: CFA results of PEU scale with(out) fixed covariance between latent constructs

Perceived environmental uncertainty (Miles-Snow, 1978)			
Fit indices	**Value based on the original CFA model**	**Value in case of fixed connection (Cov=1) between latent constructs**	**Eavaluation**
CMIN/d.f.	1,495	1,698	Weakened
CFI	0,925	0,849	Weakened
RMSEA	0,05	0,069	Weakened
NFI	0,918	0,828	Weakened
TLI	0,921	0,837	Weakened
GFI	0,904	0,815	Weakened

Source: Table made by the author

Table XLV: Examining discriminant validity based on Fornell-Lacker criterion in case of 3 and 4 factor structure solutions of Segev's strategic identification scale

	Squares of correlations between latent constructs				**AVE indicator**	**Evaluation**
Strategic orientation	Prospector	Analyser	Defender/Reactor			
Prospector	1	0,045	0,128		0,622	Compliance
Analyser	0,045	1	0,086		0,564	Compliace
Defender/Reactor	0,128	0,086	1		0,527	Compliance
	Squares of correlations between latent constructs				**AVE indicator**	**Evaluation**
Strategic orientation	Prospector	Analyser	Defender	Reactor		
Prospector	1	0,026	0,127	0,253	0,497	Compliance
Analyser	0,026	1	0,062	0,027	0,439	Compliance
Defender	0,127	0,062	1	0,810	0,369	No compliance
Reactor	0,253	0,027	0,810	1	0,314	No compliance

Source: Table made by the author

Table XLVI: Discriminant validity of PEU scale (Fornell-Larcker criteria)

	Squares of correlations between latent constructs							**AVE indicator**	**Evaluation**
Latent construct	**Wholesalers**	**Producers**	**Patients**	**Competitor pharmacies**	**Regulatory authoritis**	**Hungarian Chamber of Pharmcists**	**Financial conditions**		
Wholesalers	1	0,038	0,121	0,030	0,004	0,002	0,097	0,569	Compliance
Producers	0,038	1	0,084	0,028	0,166	0,105	0,053	0,593	Compliance
Patients	0,121	0,084	1	0,161	0,042	0,044	0,145	0,585	Compliance
Competitors	0,030	0,028	0,161	1	0,003	0,011	0,128	0,780	Compliance
Regulatory authorities	0,004	0,166	0,042	0,003	1	0,184	0,123	0,608	Compliance
Hungarian Chamber of Pharmacists	0,002	0,105	0,044	0,011	0,184	1	0,06	0,748	Compliance
Financial conditions	0,097	0,053	0,145	0,128	0,123	0,056	1	0,581	Compliance

Source: Table made by the author

Table XLVII: Evaluation of discriminant validity of measurement instruments

Form of analysis method of discriminant analysis	Segev (4)	Segev (3)	PEU
Exploratory factor analysis	Not valid	Valid	Valid
Confirmatory factor analysis	Not valid	Valid	Valid
Reliability of indicators	Not valid	Valid	Valid
Covariance between latent constructs	Not valid	Valid	Valid
Comparison of CFA models (original vs. latents' cov=1)	Valid	Valid	Valid
Fornell-Larcker criteria + cross-loadings validity	Not valid	Valid	Valid

Source: Table made by the author

Table XLVIII: Differences in behavioural characteristics between Prospectors, Analysers and Defender/Reactors

Items	DEF/REA Mean	ANA Mean	PRO Mean	F value	Sig.	DEFREA vs. ANA			ANA vs. PRO			DEFREA vs. PRO		
						T	S	B	T	S	β	T	S	B
DEF_1	4,44	3,81	3,00	39,585	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
DEF_2	3,88	3,26	2,96	13,528	0,000	0,02	0,03	0,02	0,303	0,337	0,421	0,000	0,000	0,000
DEF_3	2,93	1,97	1,57	30,606	0,000	0,000	0,000	0,000	0,118	0,141	0,144	0,000	0,000	0,000
DEF_4	4,18	4,13	3,93	1,116	0,329	0,947	0,952	1,000	0,531	0,562	0,851	0,310	0,344	0,434
DEF_6	3,19	2,37	2,09	16,442	0,000	0,000	0,000	0,000	0,420	0,454	0,628	0,000	0,000	0,000
DEF_7	3,42	2,48	2,30	19,665	0,000	0,000	0,000	0,000	0,680	0,705	1,000	0,000	0,000	0,000
DEF_8	2,80	1,87	1,57	24,259	0,000	0,000	0,000	0,000	0,312	0,346	0,437	0,000	0,000	0,000
DEF_9	4,15	3,39	2,71	33,694	0,000	0,000	0,000	0,000	0,001	0,002	0,002	0,000	0,000	0,000
REA_1	4,12	3,11	2,71	30,544	0,000	0,000	0,000	0,000	0,135	0,161	0,169	0,000	0,000	0,000
REA_2	3,89	3,14	2,42	31,909	0,000	0,000	0,000	0,000	0,001	0,002	0,001	0,000	0,000	0,000
REA_3	3,28	2,90	2,71	4,827	0,009	0,105	0,127	0,127	0,634	0,661	1,000	0,009	0,014	0,010
ANA_1	2,27	2,73	3,82	18,348	0,000	0,003	0,004	0,003	0,000	0,000	0,000	0,004	0,005	0,004
ANA_2	2,39	3,03	4,02	13,324	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,579	0,609	0,959
ANA_3	2,36	2,48	3,39	14,668	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,660	0,685	1,000
ANA_4	2,49	3,18	4,21	11,866	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,819	0,835	1,000
ANA_5	2,40	3,10	3,80	32,214	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,415	0,449	0,620
ANA_6	2,81	2,66	3,34	13,081	0,000	0,000	0,000	0,000	0,459	0,492	0,703	0,002	0,003	0,002
ANA_7	1,77	2,06	2,96	11,677	0,000	0,000	0,000	0,000	0,606	0,634	1,000	0,003	0,004	0,003
ANA_8	1,86	2,24	3,13	22,694	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,090	0,110	0,108
DEF_5	3,38	3,95	4,30	7,772	0,001	0,001	0,001	0,001	0,007	0,010	0,007	0,960	0,963	1,000
PRO_1	2,89	3,50	2,27	39,023	0,000	0,024	0,032	0,026	0,000	0,000	0,000	0,000	0,000	0,000
PRO_2	3,14	3,92	2,95	44,933	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000
PRO_3	3,25	4,06	3,09	24,659	0,000	0,698	0,721	1,000	0,000	0,000	0,000	0,000	0,000	0,000
PRO_4	3,41	4,24	3,29	41,304	0,000	0,001	0,001	0,001	0,000	0,000	0,000	0,000	0,000	0,000
PRO_5	2,31	3,77	2,55	32,967	0,000	0,000	0,000	0,000	0,001	0,001	0,001	0,000	0,000	0,000
PRO_6	2,85	3,65	3,43	6,957	0,001	0,677	0,702	1,000	0,001	0,002	0,002	0,009	0,013	0,009
PRO_7	1,90	2,66	2,48	29,235	0,000	0,140	0,165	0,074	0,000	0,000	0,000	0,000	0,000	0,000
PRO_8	2,42	3,31	2,04	30,360	0,000	0,046	0,059	0,052	0,000	0,000	0,000	0,000	0,000	0,000
REA_4	2,66	3,39	2,71	14,998	0,000	0,002	0,004	0,002	0,152	0,179	0,192	0,000	0,000	0,000

Source: Table made by the author

Table XLIX: AVE indicators of constructs of multi-item Segev and PEU scales

Scale	Latent construct	Value of Average Variance Extracted (AVE)
Perceived environmental uncertainty	Wholesalers	0,569
	Producers	0,593
	Patients	0,585
	Competitor pharmacies	0,780
	Regulatory authorities	0,608
	Hungarian Chamber of Pharmacists	0,748
	Financial conditions	0,581
Segev (4)	Prospector	0,497
	Ananlyser	0,439
	Defender	0,369
	Reactor	0,314
Segev (3)	Prosector	0,622
	Analyser	0,564
	Defender/Reactor	0,527

Source: Table made by the author

Table L: Correlation matrix of the behavioural characteristics of Defender/Reactor SO

Abbr.	Behavioural characteristics described		DEF_1	DEF_2	DEF_3	DEF_4	DEF_6	DEF_7	DEF_8	DEF_9	REA_1	REA_2	REA_3
DEF_1	Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments.	Corr.	1										
		Sig.											
DEF_2	Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently.	Corr.	0,600	1									
		Sig.	0,000										
DEF_3	Compared to competitors our pharmacy offers a narrower range of products and services.	Corr.	0,359	0,372	1								
		Sig.	0,000	0,000									
DEF_4	Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors.	Corr.	0,448	0,420	0,435	1							
		Sig.	0,000	0,000	0,001								
DEF_6	The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services.	Corr.	0,438	0,461	0,504	0,293	1						
		Sig.	0,000	0,000	0,000	0,000							
DEF_7	Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation.	Corr.	0,366	0,360	0,384	0,344	0,597	1					
		Sig.	0,000	0,000	0,000	0,000	0,000						
DEF_8	Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care.	Corr.	0,348	0,353	0,697	0,306	0,573	0,506	1				
		Sig.	0,000	0,000	0,000	0,003	0,000	0,000					
DEF_9	Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications.	Corr.	0,698	0,521	0,378	0,491	0,375	0,349	0,362	1			
		Sig.	0,000	0,000	0,000	0,000	0,000	0,000	0,000				
REA_1	Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments.	Corr.	0,303	0,343	0,285	0,343	0,289	0,220	0,283	0,488	1		
		Sig.	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000			
REA_2	Our pharmacy seldom takes business risks.	Corr.	0,311	0,214	0,237	0,293	0,331	0,289	0,334	0,359	0,564	1	
		Sig.	0,000	0,002	0,000	0,000	0,000	0,000	0,000	0,000	0,000		
REA_3	Our pharmacy often acts upon the direct pressures of the market and regulatory environments.	Corr.	0,248	0,254	0,202	0,384	0,286	0,355	0,212	0,361	0,471	0,480	1
		Sig.	0,000	0,000	0,002	0,000	0,000	0,000	0,002	0,000	0,000	0,000	

Source: Table made by author

Table LI: The degree of prevalence of Defender and Reactor characteristics in case of pharmacies classified as Defender/Reactors

Serial no. of pharmacy	DEF_AVG	REA_AVG	DEF VS. REA	Serial no. of pharmacy	DEF_AVG	REA_AVG	DEF VS. REA
2.	3,50	3,83	REA	85.	3,63	4,50	REA
4.	3,38	4,50	REA	86.	3,75	3,83	REA
7.	3,75	4,17	REA	88.	3,25	4,67	REA
8.	2,63	4,17	REA	89.	4,38	5,00	REA
11.	4,13	4,50	REA	90.	3,13	2,50	DEF
12.	4,00	4,67	REA	100.	3,75	5,00	REA
18.	4,13	5,00	REA	103.	3,50	4,17	REA
20.	4,00	4,17	REA	104.	3,50	3,83	REA
22.	3,75	4,17	REA	107.	2,75	4,50	REA
24.	3,13	4,83	REA	110.	3,00	4,17	REA
26.	3,50	4,17	REA	114.	3,63	4,50	REA
27.	3,00	3,83	REA	117.	2,75	3,83	REA
28.	3,25	3,17	DEF	120.	3,75	4,17	REA
29.	4,50	4,50	DEF=REA	121.	3,00	4,17	REA
31.	3,38	3,83	REA	127.	1,00	1,50	REA
32.	3,38	2,83	DEF	130.	3,75	5,00	REA
33.	3,13	3,17	REA	131.	3,13	3,50	REA
34.	3,63	4,17	REA	132.	4,00	4,50	REA
42.	4,63	4,17	DEF	133.	4,25	3,50	DEF
43.	2,88	3,83	REA	135.	3,13	4,50	REA
45.	4,75	4,67	DEF	140..	3,50	4,17	REA
47.	4,38	4,17	DEF	141.	3,00	4,50	REA
48.	3,25	4,17	REA	143.	4,00	4,17	REA
50.	4,50	4,83	REA	148.	3,75	4,50	REA
51.	4,25	4,50	REA	149.	3,25	3,50	REA
52.	3,25	3,50	REA	154.	4,63	3,83	REA
53.	3,75	3,17	DEF	155.	3,25	4,50	REA
54.	4,13	4,83	REA	160.	3,25	4,50	REA
55.	4,63	4,83	REA	162..	3,38	4,17	REA
56.	3,88	2,83	DEF	169.	3,75	4,17	REA
57.	3,13	4,67	REA	170.	3,75	4,17	REA
58.	4,88	4,50	DEF	172.	3,25	4,50	REA
61.	3,13	4,17	REA	180.	3,50	3,83	REA
62.	3,88	4,17	REA	182.	4,00	4,50	REA
63.	3,13	4,17	REA	183.	3,88	2,83	DEF
70.	2,88	4,17	REA	186.	2,38	3,17	REA
71.	3,88	4,50	REA	189.	3,25	4,83	REA
72.	3,25	4,50	REA	194.	3,88	4,17	REA
73.	3,38	3,83	REA	195.	2,25	4,50	REA
75.	3,13	4,50	REA	197.	3,50	4,17	REA
77.	3,25	3,83	REA	198.	5,00	5,00	DEF=REA
79.	2,75	2,83	REA	202.	5,00	5,00	DEF=REA
80.	4,13	5,00	REA	205.	5,00	5,00	DEF=REA
82.	3,13	4,17	REA	207.	5,00	5,00	DEF=REA
83.	3,25	4,5	REA	**Final result**	**REA= 89/74**	**DEF=89/10**	**DEF=REA= 89/5**

Source: Table made by the author

Table LII: Comparison of means of pharmacists' evaluations for assessing the prevalence of Defender and Reactor characteristics in case pharmacies pursuing Defender/Reactor SO

Paired Samples Statistics									
		Mean	N	Std. Deviation	Std. Error Mean				
Pair 1	DEF_AVG	3,59	89	0,67	0,071				
	REA_AVG	4,16	89	0,63	0,067				
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	DEF_AVG-REA_AVG	-0,57	0,65	0,069	-0,707	-0,430	-8,177	88	0,000

Source: Table made by the author

Table LIII: Modifications made on our original research questions and hypotheses

Change made on question or hypothesis		Change made on question or hypothesis	
K3	Prospector, Analyser, Defender/Reactor	**H2**	Defender/ Reactor
K4	Prospector, Analyser, Defender/Reactor	**H2a**	Deleted
K4a	Deleted	**H2b**	Deleted
K4c	Deleted	**H2d**	Defender / Reactor
K4d	Defender/Reactor	**H3c**	Deleted
K5	Prospector, Analyser, Defender/Reactor	**H3d**	Defender/Reactor
K5b	Deleted	**H4c**	Deleted
K5c	Deleted	**H4d**	Defender/Reactor
K5d	Defender/Reactor	**H5b**	Deleted
K6	Prospector, Analyser, Defender/Reactor	**H5d**	Defender/Reactor
K6b	Deleted	**H6b**	Deleted
K6d	Defender/Reactor	**H6d**	Defender / Reactor
H1	Prospector, Analyser, Defender / Reactor	**H7c**	Deleted
H1b	Deleted	**H7d**	Defender / Reactor
H1c	Deleted	**H8c**	Deleted
H1d	Defender/ Reactor	**H8d**	Defender/ Reactor

Source: Table made by the author

Table LIV: Reliability based on internal consistency in case of 3 and 4 factor structure solutions of Segev and the origonal 7 factor structure of PEU scales

PERCEIVED ENVIRONMENTAL UNCERTAINTY (Miles-Snow, 1978)		
Latent construct	**Number of indicators belonging to the latent construct**	**Value of Cronbach's Alfa indicator**
Wholesalers	5	0,720
Producers	5	0,788
Patients	6	0,773
Competitor pharmacies	7	0,910
Regulatory authorities	9	0,875
Hungarian Chamber of Pharmacists	5	0,885
Financial conditions	8	0,854
MILES AND SNOW'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 4 FACTOR		
Latent construct	**Number of indicators belonging to the latent construct**	**Value of Cronbach's Alfa indicator**
Defender	9	0,822
Prospector	8	0,884
Analyser	8	0,856

Reactor	4	0,653
MILES AND SNOW'S STRATEGIC ORIENTATIONS (SEGEV, 1987) 3 FACTOR		
Prospector	9	0,887
Analyser	9	0,865
Defender/Reactor	11	0,875

Source: Table made by the author

Table LV: The Composite Reliability indicator of multi-item Segev and PEU scales

Scale	Latent construct	Value of Composite Reliability
Perceived environmental uncertainty	Wholesalers	0,787
	Producers	0,802
	Patients	0,824
	Competitor pharmacies	0,917
	Regulatory authorities	0,884
	Hungarian Chamber of Pharmacists	0,890
	Financial conditions	0,861
M&S strategic orientations, Segev (3)	Defender/Reactor	0,923
	Prospector	0,935
	Analyser	0,919
M&S strategic orientations, Segev (4)	Prospector	0,884
	Analyser	0,858
	Defender	0,828
	Reactor	0,486

Source: Table made by the author

Table LVI: Harman's single factor method for testing CMV

Multi-item scale	Explained degree of variance (%)	Evaluation
Perceived environmental uncertainty	19,369-21,11	CMV irrelevant
M&S strategic orientations, Segev (3)	21,1-23,398	CMV irrelevant
M&S strategic orientations, Segev (4)	18,06-19,45	CMV irrelevant

Source: Table made by the author

Table LVII: Common single latent factor analysis for testing CMV

Multi-item scale	Regression weight and its square between CSLF and manifest variables	Evaluation
Perceived environmental uncertainty	0,337 és 0,1135, that is 11,35%<25%	CMV irrelevant
M&S strategic orientations, Segev (3)	0,33 és 0,1089, that is 10,89%<25%	CMV irrelevant
M&S strategic orientations, Segev (4)	0,44 és 0,1936, That is 19,36 <25%	CMV irrelevant

Source: Table made by the author

Table LVIII: Testing the problem of CMV with „marker" variable method in Segev scale by the integration of latent constructs of PEU scale

„Marker" variable	Regression weight and its square between CSLF and manifest variables	CSLF „Threshold value"	Evaluation
PEU_WHS	0,19 és 0,0361, that is 3,61%	0,33	CMV irrelevant
PEU_PROD	0,22 és 0,0484, that is 4,84%	0,33	CMV irrelevant
PEU_PAT	0,23 és 0,0529, that is 5,29%	0,33	CMV irrelevant
PEU_COMP	0,31 és 0,0961, that is 9,61%	0,33	CMV irrelevant
PEU_REG	0,26 és 0,0676, that is 6,76%	0,33	CMV irrelevant
PEU_MGYK	0,28 és 0,0784, that is 7,84%	0,33	CMV irrelevant
PEU_FIN	0,26 és 0,0676, that is 6,76%	0,33	CMV irrelevant

Source: Table made by the author

Table LIX: Testing of CMV with „marker" variable method in PEU scale by the inclusion of latent constructs of Segev scale

„Marker" variable	Regression weight and its square between CSLF and manifest variables	CSLF „Threshold value"	Evaluation
DEFENDER	0,34 és 0,1156, that is 11,56%	0,337	CMV minimal
PROSPECTOR	0,38 és 0,1444, that is 14,44%	0,337	CMV minimal
ANALYSER	0,39 és 0,1521, that is 15,21%	0,337	CMV minimal
REACTOR	0,34 és 0,1156, that is 11,56%	0,337	CMV minimal
DEF_REA	0,35 és 0,1225, that is 12,25%	0,337	CMV minimal
PROSPECTOR	0,37 és 0,1369, that is 13,69%	0,337	CMV minimal
ANALYSER	0,38 és 0,1444, that is 14,44%	0,337	CMV minimal

Source: Table made by the author

Table LX: Summary of quantitative tests applied for testing CMV

Method	Perceived environmental uncertainty	Miles and Snow's strategic orientations, Segev (3)
Harman's Single factor method	CMV not relevant	CMV not relevant
Common single latent factor analysis	CMV not relevant	CMV not relevant
Marker variable method	CMV minimal	CMV not relevant

Source: Table made by the author

Table LXI: Significance of differences between evaluations of pharmacists regarding variables integrated in non-response bias tests, early and late respondents by county

	Statistics	Budapest	Baranya	BAZ	Pest	Vas	Other
AVG_PRO	F value	0,09	0,06	1,056	1,198	0,00	0,048
	Sig.	0,776	0,939	0,311	0,277	1,00	0,832
AVG_ANA	F value	0,622	0,520	0,051	0,035	0,411	0,932
	Sig.	0,435	0,480	0,822	0,853	0,536	0,359
AVG_DEF	F value	0,019	0,026	1,674	0,958	0,003	0,822
	Sig.	0,892	0,873	0,204	0,331	0,960	0,388
AVG_REA	F value	0,470	0,040	1,255	0,741	0,008	0,752
	Sig.	0,830	0,949	0,270	0,392	0,930	0,408
AVG_PEU_WHS	F value	7,275	0,875	0,015	1,518	0,000	1,689
	Sig.	0,011	0,363	0,903	0,221	1,000	0,226
AVG_PEU_PROD	F value	2,190	0,287	0,515	0,630	0,000	0,069
	Sig.	0,148	0,599	0,478	0,480	1,000	0,798
AVG_PEU_PAT	F value	7,014	0,042	0,689	0,056	0,046	0,210
	Sig.	0,012	0,841	0,412	0,814	0,834	0,658
AVG_PEU_COMP	F value	4,050	0,005	1,011	0,286	0,633	0,026
	Sig.	0,052	0,946	0,322	0,594	0,445	0,874
AVG_PEU_REG	F value	5,034	0,170	2,039	0,213	0,050	1,035
	Sig.	0,031	0,686	0,162	0,645	0,827	0,336
AVG_PEU_MGYK	F value	2,198	3,367	0,449	1,667	0,226	0,745
	Sig.	0,147	0,084	0,507	0,200	0,645	0,711
AVG_PEU_FIN	F value	2,438	2,013	0,361	0,284	1,276	1,908
	Sig.	0,127	0,174	0,552	0,596	0,285	0,211
AVG_PEU	F value	1,304	0,000	0,022	0,134	0,007	1,198
	Sig.	0,261	1,000	0,883	0,715	0,937	0,302
PEU_HIGH_LOW	χ^2 value	0,273	0,014	0,021	0,315	0,343	0,782
	Sig.	0,601	0,906	0,886	0,575	0,558	0,376
SALES	F value	0,021	2,226	2,097	0,002	0,233	0,118
	Sig.	0,885	0,156	0,157	0,963	0,641	0,741
NET PROFIT	F value	0,450	0,568	3,348	2,101	0,017	0,055
	Sig.	0,509	0,467	0,077	0,152	0,902	0,821
TOTAL AREA OF SPACE	F value	0,520	3,03	0,253	0,206	0,559	13,378
	Sig.	0,476	0,589	0,618	0,651	0,476	0,06
AREA OF OFFICINA	F value	0,352	1,82	0,156	2,156	0,061	1,754
	Sig.	0,558	0,675	0,696	0,146	0,812	0,222
EMPLOYEES	F value	0,107	1,425	0,006	5,631	0,024	1,149
	Sig.	0,746	0,249	0,940	0,02	0,880	0,315
OWN_STRUCT	χ^2 value	2,030	0,006	1,247	0,106	3,086	0,244
	Sig.	0,154	0,937	0,264	0,745	0,079	0,621

OWN_COOP	χ^2 value	0,001	0,014	3,325	0,508	1,333	0,052
	Sig.	0,982	0,906	0,068	0,476	0,248	0,819
RELA_COOP	χ^2 value	1,449	2,898	0,026	0,658	0,343	2,213
	Sig.	0,229	0,089	0,873	0,417	0,558	0,137

Source: Table made by the author

Table LXII: Sample distribution of SOs identified by self-typing paragraph method and Segev multi-item scale exhibiting 4 factors (strategic orientations)

STRATEGIC ORIENTATIONS	FREQUENCY (n) AND DISTRIBUTION (%)	MEASUREMENT INSTRUMENTS	
		Self-typing paragraphs (4)	Segev multi-item scale (4)
Prospector	N	48	40
	(%)	23,2	19,3
Analyser	N	69	42
	(%)	33,3	20,3
Defender	N	80	45
	(%)	38,6	21,7
Reactor	N	10	80
	(%)	4,8	38,6
IN TOTAL	N	207	207
	(%)	100	100

Source: Table made by the author

Table LXIII: Sample distribution of SOs identified by self-typing paragraph method and multi-item Segev scale exhibiting 3 factors (strategic orientations)

STRATEGIC ORIENTATION	FREQUENCY (n) AND DISTRIBUTION (%)	MEASUREMENT TOOLS	
		Self-typing paragraphs (3)	Segev multi-item scale (3)
Prospector	N	48	55
	(%)	23,1	26,6
Analyser	N	69	63
	(%)	33,3	30,4
Defender/Reactor	N	90	89
	(%)	43,4	43
IN TOTAL	N	207	207
	(%)	100	100

Source: Table made by the author

Table LXIV: The degree of internal identity in the case of self-typing paragraph methods providing 3 and 4 SOs and Segev scale exhibiting 3 and 4 factor structure solutions

MATCH	FREQUENCY (n) AND DISTRIBUTION (%)	MEASUREMENT INSTRUMENTS	
		Self-typing paragraphs (3 and 4)	Segev multi-item scale (3 and 4)
Yes	N	197	165
	(%)	96,5	79,7
No	N	10	42
	(%)	3,5	20,3
IN TOTAL	N	207	207
	(%)	100	100

Source: Table made by the author

Table LXV: The degree of external (between measurement instruments) identity of SOs identified by self-typing parargraph method and multi-item Segev scale

MATCH	FREQUENCY (n) AND DISTRIBUTION (%)	MEASUREMENT TOOLS	
		Self-typing paragraphs (4) and multi-item scale of Segev (4)	Self-typing paragraphs (3) and multi-item scale of Segev (3)
Yes	N	81	129
	(%)	39,1	62,3
No	N	126	78
	(%)	60,9	37,7
IN TOTAL	N	207	207
	(%)	100	100

Source: Table made by the author

Table LXVI: The degree of identity between classification results of original self-typing paragraphs and multi-item Segev scale operationalising 4 strategic orientations of M&S

Segev (4) Defender	Self-type (4) Defender		Segev (4) Prospector	Self-type (4) Prospector	
	0	1		0	1
0	97	65	0	128	39
1	29	16	1	32	8
Segev (4) Analyser	**Self-type (4) Defender**		**Segev (4) Reactor**	**Self-type (4) Reactor**	
	0	1		0	1
0	108	56	0	119	8
1	30	13	1	78	2

Source: Table made by the author

Table LXVII: Comparing the classification results of identification methods applied for operationalising strategic orientations relevant in HPRDS

Segev (3) Defender/Reactor	Self-type (3) Defender/Reactor		Segev (3) Prospector	Self-type (3) Prospector		Segev (3) Analyser	Self-type (3) Analyser	
	0	1		0	1		0	1
0	94	24	0	136	15	0	107	38
1	22	67	1	24	32	1	31	31

Source: Table made by the author

Table LXVIII: Convergence in the classification results of measurement instruments

	Measurement tool and strategic orientation	Mean	McNemar χ^2	Sig.
1	Self-type (4) Defender	0,3913	13,032	0,000
	Segev (4) Defender	0,2174		
2	Self-type (4) Prospector	0,2271	0,522	0,476
	Segev (4) Prospector	0,1932		
3	Self-type (4) Analyser	0,3333	7,267	0,007
	Segev (4) Analyser	0,2077		
4	Self-type (4) Reactor	0,0483	55,360	0,000
	Segev (4) Reactor	0,3865		
1	Self-type (3) Defender/Reactor	0,4396	0,22	0,883
	Segev (3) Defender / Reactor	0,4300		
2	Self-type (3) Prospector	0,2271	1,641	0,200
	Segev (3) Prospector	0,2705		
3	Self-type (3) Analyser	0,3333	0,522	0,470
	Segev (3) Analyser	0,2995		

Source: Table made by the author

Table LXIX: Comparing the distribution of SOs identified by original measurement tools

	Measurement tool and strategic orientation	Mean	T value	Sig.
1	Self-type (4) Defender	0,3913	8,676	0,000
	Self-type (4) Reactor	0,0483		
2	Self-type (4) Prospector	0,2271	5,200	0,000
	Self-type (4) Reactor	0,0483		
3	Self-type (4) Analyser	0,3333	7,464	0,000
	Self-type (4) Reactor	0,0483		
4	Self-type (4) Analyser	0,3333	2,059	0,041
	Self-type (4) Prospector	0,2271		
5	Self-type (4) Analyser	0,3333	-0,980	0,328
	Self-type (4) Defender	0,3913		
6	Self-type (4) Defender	0,3913	-3,066	0,002
	Self-type (4) Prospector	0,2271		
1	Segev (4) Defender	0,2174	-3,200	0,002
	Segev (4) Reactor	0,3865		
2	Segev (4) Prospector	0,1932	-3,766	0,000
	Segev (4) Reactor	0,3865		
3	Segev (4) Analyser	0,2077	3,421	0,001
	Segev (4) Reactor	0,3865		
4	Segev (4) Analyser	0,2077	-0,329	0,743
	Segev (4) Prospector	0,1932		
5	Segev (4) Analyser	0,2077	0,215	0,830
	Segev (4) Defender	0,2174		
6	Segev (4) Defender	0,2174	0,541	0,589
	Segev (4) Prospector	0,1932		

Source: Table made by the author

Table LXX: Comparing the distribution of relevant SOs observable in HPRDS

	Measurement tool and strategic orientation	Mean	T value	Sig.
1	Self-type (3) Defender/Reactor	0,4396	3,870	0,000
	Self-type (3) Prospector	0,2271		
2	Self-type (3) Defender/Reactor	0,4396	1,748	0,082
	Self-type (3) Analyser	0,3333		
3	Self-type (3) Prospector	0,2271	-2,059	0,041
	Self-type (3) Analyser	0,3333		
1	Segev (3) Defender/Reactor	0,4300	2,785	0,006
	Segev (3) Analyser	0,2705		
2	Segev (3) Defender/Reactor	0,4300	2,218	0,028
	Segev (3) Analyser	0,2995		
3	Segev (3) Prospector	0,2705	-0,551	0,582
	Segev (3) Analyser	0,2995		

Source: Table made by the author

Table LXXI: Correlation between SOs, degree of PEU, GL and BP indicators

Correlation		DEF_REA_ AVG	PRO_ AVG	ANA_ AVG	PEU_AVG	URBAN_ RURAL	SALES	NET PROFIT
DEF_REA_AVG	Corr.	1	-0,330	0,166	0,070	0,189**	-0,344	-0,103
	Sig.		0,000	0,017	0,318	0,007	0,000	0,139
PRO_AVG	Corr.	-0,330	1	0,183	0,103	-0,142*	0,374	0,126
	Sig.	0,000		0,008	0,142	0,043	0,000	0,069
ANA_AVG	Corr.	0,166	0,183	1	0,259**	-0,030	-0,060	0,017
	Sig.	0,017	0,008		0,000	0,671	0,393	0,813
PEU_AVG	Corr.	0,070	0,103	0,259**	1	0,137	0,062	0,099
	Sig.	0,318	0,142	0,000		0,050	0,371	0,157

URBAN_RURAL	Corr.	0,189**	-0,142*	-0,030	0,137	1	-0,345**	-0,148*
	Sig.	0,007	0,043	0,671	0,050		0,000	0,035
SALES	Corr.	-0,344	0,374	-0,060	0,062	-0,345**	1	0,604
	Sig.	0,000	0,000	0,393	0,371	0,000		0,000
NET PROFIT	Corr.	-0,103	0,126	0,017	0,099	-0,148*	0,604	1
	Sig.	0,139	0,069	0,813	0,157	0,035	0,000	

Source: Table made by the author

Table LXXII: Associations between SOs and perceived environmental uncertainty

HIGHLOWPEU * CLASSIFICATIONSEGEV Cross-tabs evaluation					
		CLASSIFICATIONSEGEV			Total
		DEF_REA	PRO	ANA	
HIGH PEU	Count	48	31	22	101
	Expected Count	43,1	27,5	30,4	101,0
	% within HIGHLOWPEU	47,5%	30,7%	21,8%	100,0%
	% within CLASSIFICATIONSEGEV	54,5%	55,4%	35,5%	49,0%
	% of Total	23,3%	15,0%	10,7%	49,0%
	Residual	4,9	3,5	-8,4	
	Std. Residual	,7	,7	-1,5	
	Adjusted Residual	1,4	1,1	-2,6	
LOW PEU	Count	40	25	40	105
	Expected Count	44,9	28,5	31,6	105,0
	% within HIGHLOWPEU	38,1%	23,8%	38,1%	100,0%
	% within CLASSIFICATIONSEGEV	45,5%	44,6%	64,5%	51,0%
	% of Total	19,4%	12,1%	19,4%	51,0%
	Residual	-4,9	-3,5	8,4	
	Std. Residual	-,7	-,7	1,5	
	Adjusted Residual	-1,4	-1,1	2,6	
TOTAL	Count	88	56	62	206
	Expected Count	88,0	56,0	62,0	206,0
	% within HIGHLOWPEU	42,7%	27,2%	30,1%	100,0%
	% within CLASSIFICATIONSEGEV	100,0%	100,0%	100,0%	100,0%
	% of Total	42,7%	27,2%	30,1%	100,0%

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,521[a]	2	,038
Likelihood Ratio	6,597	2	,037
Linear-by-Linear Association	4,767	1	,029
N of Valid Cases	206		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 27,46.

Source: Table made by the author

Table LXXIII: Differences in PEU between pharmacies pursuing Prospector, Analyser and Defender/Reactor strategic orientations

DESCRIPTIVES								
PEU_AVG								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
D/R	88	2,85691414	,448391849	,047798732	2,76190899	2,95191930	1,644667	3,888889
P	55	2,85361616	,441639471	,059550654	2,73422429	2,97300803	2,000222	3,911778
A	62	3,07274910	,434948071	,055238460	2,96229298	3,18320523	2,089333	3,978222
Total	205	2,92130623	,451593477	,031540657	2,85911875	2,98349371	1,644667	3,978222

ANOVA					
PEU_AVG					
	Sum of squares	Degrees of freedom	Mean Square	F Value	Sig.
Between Groups	2,039	2	1,019	5,205	0,006
Within Groups	39,564	202	0,196		
Total	41,603	204			

Source: Table made by the author

Table LXXIV: Paired differences between strategic orientations in terms of PEU

	(I) CLASSIFICATIONSEGEV	(J) CLASSIFICATIONSEGEV	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Defender/Reactor	Prospector	,003297980	,076071329	,999
		Analyser	-,215834963*	,073381083	,010
	Prospector	Defender/Reactor	-,003297980	,076071329	,999
		Analyser	-,219132942*	,081976885	,022
	Analyser	Defender/Reactor	,215834963*	,073381083	,010
		Prospector	,219132942*	,081976885	,022
Scheffe	Defender/Reactor	Prospector	,003297980	,076071329	,999
		Analyser	-,215834963*	,073381083	,014
	Prospector	Defender/Reactor	-,003297980	,076071329	,999
		Analyser	-,219132942*	,081976885	,030
	Analyser	Defender/Reactor	,215834963*	,073381083	,014
		Prospector	,219132942*	,081976885	,030
Bonferroni	Defender/Reactor	Prospector	,003297980	,076071329	1,000
		Analyser	-,215834963*	,073381083	,011
	Prospector	Defender/Reactor	-,003297980	,076071329	1,000
		Analyser	-,219132942*	,081976885	,024
	Analyser	Defender/Reactor	,215834963*	,073381083	,011
		Prospector	,219132942*	,081976885	,024

Source: Table made by the author

Table LXXV: Effect of M&S's SOs on the degree of PEU

Independent variable	Dependent variable	β	Sig.
Prospector	PEU	0,136	0,146
Analyser	PEU	0,403	0,001
Defender/Reactor	PEU	0,054	0,548

Source: Table made by the author

Table LXXVI: Differences between pharmacies characterised by low and high PEU with regard to the prevalence of M&S's SOs

DESCRIPTIVES

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
AVG_DEF_REA	HIGH	102	3,099822	,7166162	,0735233	2,982247	3,274212	1,0000	5,0000
	LOW	105	3,167100	,6861927	,0676126	3,036235	3,304453	1,0909	5,0000
	Total	207	3,133948	,6994851	,0497102	3,052105	3,248170	1,0000	5,0000
AVG_PRO	HIGH	102	2,805011	,7953924	,0816055	2,616918	2,940977	1,0000	5,0000
	LOW	105	2,931217	,7146077	,0704124	2,822581	3,101906	1,0000	5,0000
	Total	207	2,869028	,7580938	,0538754	2,768052	2,980545	1,0000	5,0000
AVG_ANA	HIGH	102	2,879085	,7108031	,0729269	2,858711	3,148307	1,0000	4,3333
	LOW	105	3,125926	,7564560	,0745358	3,017207	3,312890	1,1111	4,8889
	Total	207	3,004294	,7374991	,0524118	2,984182	3,190902	1,0000	4,8889

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
DEF_REA	Between Groups	,234	1	,234	,361	,548
	Within Groups	132,903	205	,648		
	Total	133,137	206			
PRO	Between Groups	0,824	1	,824	1,209	,273
	Within Groups	139,773	205	,682		
	Total	140,597	206			
ANA	Between Groups	3,152	1	3,152	4,763	,059
	Within Groups	135,683	205	,664		
	Total	138,836	206			

Source: Table made by the author

Table LXXVIII: The potential moderating effect of PEU by pharmacists in the relationship between M&S's SOs and sales of pharmacies

PERCEIVED ENVIRONMENTAL UNCERTAINTY AND SALES			β	T value	Sig.
1. MODEL	Main effects	Constant		4,854	0,000
		Prospector	0,222	2,790	0,006
		Analyser	-0,018	-0,222	0,825
		Defender/Reactor	-0,295	-4,094	0,000
		Perceived environmental uncertainty (PEU)	0,070	0,982	0,327
2. MODEL	Main effects	Constant		4,656	0,000
		Prospector	0,240	2,984	0,003
		Analyser	-0,039	-0,485	0,628
		Defender/Reactor	-0,273	-3,696	0,000
		PEU	0,081	1,112	0,268
	Interaction effects	Prospector*PEU	-0,074	-0,859	0,392
		Analyser*PEU	0,059	0,679	0,498
		Defender/Reactor*PEU	-0,099	-1,371	0,172
3. MODEL	Main effects	Constant		2,037	0,000
		Prospector	0,140	2,010	0,046
		Analyser	-0,034	-0,491	0,624
		Defender/Reactor	-0,132	-2,043	0,043
		PEU	0,068	1,110	0,269
	Interaction effects	Prospector*PEU	-0,106	-1,454	0,148
		Analyser*PEU	0,012	0,165	0,869
		Defender/Reactor*PEU	-0,076	-1,261	0,209
	Pharmacy „socio-demographic" control variables	Urban/Rural	-0,139	-2,096	0,038
		Ownership structure	0,044	0,698	0,486
		Equity based cooperation	-0,030	-0,512	0,610
		Relationship based cooperation	0,031	0,497	0,620
		Total area of space of pharmacy	0,110	1,445	0,150
		Total area of officina	-0,061	-0,810	0,419
		Number of employees	0,472	6,546	0,000
4. MODEL	Main effects	Constant		1,811	0,072
		Prospector	0,132	1,787	0,049
		Analyser	-0,054	-0,743	0,458
		Defender/Reactor	-0,149	-2,241	0,026
		PEU	0,075	1,203	0,231
	Interaction effects	Prospector*PEU	-0,096	-1,294	0,197
		Analyser*PEU	0,016	0,211	0,833
		Defender/Reactor*PEU	-0,077	-1,244	0,215
	Pharmacy „socio-demographic" control variables	Urban/Rural	-0,113	-1,490	0,138
		Ownership structure	0,052	0,782	0,435
		Equity based cooperation	-0,039	-0,643	0,521
		Relationship based cooperation	0,031	0,489	0,624
		Total area of space of pharmacy	0,081	1,031	0,304
		Total area of officina	-0,055	-0,720	0,472
		Number of employees	0,461	6,158	0,000
	Control variables regarding locational and site attributes	There is a hospital, physician's office or nursing home in the vicinity of our pharmacy	0,090	1,457	0,147
		There are shopping malls, hypermarkets, or other kinds of retailers (e.g. shops) in the vicinity of our pharmacy	-0,044	-0,676	0,500
		There is a drugstore or gas-station close to our pharmacy	0,015	0,220	0,826
		There are many competitor pharmacies in our vicinity	0,045	0,624	0,534
		Our pharmacy operates in a shopping-mall or hypermarket	-0,024	-0,372	0,710
		A significant number of people passes by our pharmacy	0,020	0,317	0,751

Source: Table made by the author

Table LXXIX: Explanatory power of hierarchical moderated regression models exploring the potential moderating effect of PEU in the relationship of SO and pharmacies' sales

MODEL SUMMARY (SALES)					Change statistics				
Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R2 Change	F Change	Df1	Df2	Sig. R^2 Change
1	0,406	0,165	0,146	134,01889	0,165	8,677	4	176	0,000
2	0,419	0,176	0,142	134,27935	0,011	0,773	3	173	0,511
3	0,683	0,467	0,422	110,25534	0,291	12,944	7	166	0,000
4	0,693	0,480	0,415	110,90558	0,013	0,677	6	160	0,669

Source: Table made by the author

Table LXXX: Potential moderating effect of PEU in the relationship of SO and sales

Degree of perceived environmental uncertainty	Strategic orientation	β	T value	Sig.
High	Constant		3,292	0,001
	Defender/Reactor	-0,165	-1,652	0,102
	Prospector	0,375	3,764	0,000
	Analyser	-0,171	-1,948	0,074
Low	Constant		3,451	0,001
	Defender/Reactor	-0,304	-3,213	0,002
	Prospector	0,265	2,773	0,007
	Analyser	-0,001	-0,007	0,994

Source: Table made by the author

Table LXXXI: Potential moderating effect of PEU in the relationship of SO and sales

Model summary (sales)						Change statistics				
PEU	Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. F Change
High	1	0,494	0,244	0,221	120,72753	0,244	10,569	3	98	0,000
Low	2	0,439	0,193	0,169	141,18627	0,193	8,028	3	101	0,000

Source: Table made by the author

Table LXXXII: Potential moderating effect of PEU in the relationship of SO and NP

PERCEIVED ENVIRONMENTAL UNCERTAINTY AND NET PROFIT			β	T value	Sig.
1. MODEL	Main effects	Constant		0,508	0,612
		Prospector	0,088	1,030	0,304
		Analyser	-0,084	-0,987	0,325
		Defender/Reactor	-0,104	-1,348	0,179
		Perceived environmental uncertainty (PEU)	0,122	1,598	0,112
2. MODEL	Main effects	Constant		0,640	0,523
		Prospector	0,081	0,939	0,349
		Analyser	-0,077	-0,885	0,378
		Defender/Reactor	-0,100	-1,246	0,208
		Perceived environmental uncertainty (PEU)	-0,103	1,314	0,191
	Interaction effects	Prospector*PEU	-0,075	-0,801	0,424
		Analyser*PEU	0,071	0,753	0,452
		Defender/Reactor*PEU	0,066	0,845	0,399
3. MODEL	Main effects	Constant		0,078	0,938
		Prospector	0,001	0,016	0,987
		Analyser	-0,073	-0,841	0,401
		Defender/Reactor	-0,047	-0,588	0,557
		Perceived environmental uncertainty	0,111	1,446	0,150
	Interaction effects	Prospector*PEU	-0,091	-1,000	0,319
		Analyser*PEU	0,046	0,499	0,619
		Defender/Reactor*PEU	0,066	0,881	0,379
	Pharmacy „socio-demographic" control variables	Urban/Rural	-0,108	-1,303	0,194
		Ownership structure	0,016	0,201	0,841
		Equity based cooperation	-0,055	-0,743	0,458
		Relationship based cooperation	0,025	0,329	0,743
		Total area of space of pharmacy	0,210	2,215	0,028
		Total area of space of officina	0,005	0,051	0,960
		Number of employees	0,163	1,812	0,072
4. MODEL	Main effects	Constant		-0,250	0,803
		Prospector	-0,048	-0,526	0,600
		Analyser	-0,065	-0,724	0,470
		Defender/Reactor	-0,045	-0,547	0,585
		Perceived environmental uncertainty	0,097	1,255	0,211
	Interaction effects	Prospector*PEU	-0,094	-1,026	0,307
		Analyser*PEU	0,076	0,828	0,409
		Defender/Reactor*PEU	0,085	1,117	0,266
	Pharmacy „socio-demographic" control variables	Urban/Rural	-0,095	-1,014	0,312
		Ownership structure	-0,007	-0,091	0,927
		Equity based cooperation	-0,068	-0,917	0,360
		Relationship based cooperation	0,046	0,600	0,549
		Total area of space of pharmacy	0,231	2,396	0,018
		Total area of officina	0,005	0,051	0,959
		Number of employees	0,151	1,639	0,103
	Control variables regarding locational and site attributes	There is a hospital, physician's office or nursing home in the vicinity of our pharmacy	0,113	1,482	0,140
		There are shopping malls, hypermarkets, or other kinds of retailers (e.g. shops) in the vicinity of our pharmacy	0,153	1,904	0,059
		There is a drugstore or gas-station close to our pharmacy	-0,104	-1,254	0,212
		There are many competitor pharmacies in our vicinity	0,002	0,019	0,985
		Our pharmacy operates in a shopping-mall or hypermarket	0,088	1,091	0,277
		A significant number of people passes by our pharmacy	0,017	0,216	0,830

Source: Table made by the author

Table LXXXIII: Explanatory power of regression models exploring the potential moderating effect of PEU in the relationship between SO and NP

MODEL SUMMARY (NET PROFIT)					Change statistics				
Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. R^2 Change
1	0,193	0,037	0,015	14,237262	0,037	1,703	4	176	0,151
2	0,217	0,047	0,009	14,286593	0,010	0,596	3	173	0,619
3	0,411	0,169	0,099	13,619526	0,122	3,480	7	166	0,002
4	0,456	0,208	0,109	13,540520	0,039	1,324	6	160	0,249

Source: Table made by the author

Table LXXXIV: Potential moderating effect of PEU in the relationship of SO and NP

Degree of perceived environmental uncertainty	Strategic orientation	β	T value	Sig.
High	Constant		2,366	0,020
	Defender/Reactor	-0,207	-2,022	0,066
	Prospector	0,158	1,468	0,145
	Analyser	-0,123	-1,269	0,207
Low	Constant		0,035	0,972
	Defender/Reactor	0,009	0,082	0,935
	Prospector	0,036	0,340	0,734
	Analyser	0,086	0,809	0,420

Source: Table made by the author

Table LXXXV: Potential moderating effect of PEU in the relationship of SO and net profit

Model summary (sales)						Change statistics				
PEU	Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. F Change
High	1	0,346	0,120	0,093	9,529565	0,120	4,435	3	98	0,006
Low	2	0,102	0,010	-0,019	16,916081	0,010	0,357	3	101	0,784

Source: Table made by the author

Table LXXXVI: Potential moderating effect of GL in the relationship of SO and sales

GEOGRAPHICAL LOCATION AND SALES			β	T value	Sig.
1. MODEL	Main effects	Constant		27593	0,000
		Defender/Reactor	-0,253	-3,647	0,000
		Prospector	0,209	2,762	0,006
		Analyser	-0,025	-0,330	0,742
		Geographical loaction (Urban/Rural)	-0,278	-4,144	0,000
2. MODEL	Main effects	Constant		26839	0,000
		Defender/Reactor	-0,264	-3,746	0,000
		Prospector	0,212	2,774	0,006
		Analyser	-0,019	-0,255	0,799
		Geographical loaction (Urban/Rural)	-0,271	-3,922	0,000
	Interaction effects	Defender/Reactor*Geographical location	-0,016	-0,236	0,814
		Prosector* Geographical location	-0,039	-0,504	0,615
		Analyser* Geographical location	-0,050	-0,652	0,515
3. MODEL	Main effects	Constant		1,313	0,191
		Defender/Reactor	-0,161	-2,542	0,012
		Prospector	0,122	1,776	0,048
		Analyser	0,007	0,103	0,918
		Geographical loaction (Urban/Rural)	-0,111	-1,692	0,092
	Interaction effects	Defender/Reactor*Geographical location	-0,005	-0,078	0,938
		Prosector* Geographical location	-0,092	-1,354	0,178
		Analyer* Geographical location	-0,048	-0,701	0,484
	Pharmacy „socio-demographic" Control variables	Ownership structure	0,048	0,764	0,446
		Equity based cooperation	-0,001	-0,010	0,992
		Relationship based cooperation	0,050	0,809	0,420
		Total area of space of pharmacy	0,131	1,699	0,091
		Total area of officina	-0,071	-0,942	0,348
		Number of employees	0,476	6,820	0,000
4. MODEL	Main effects	Constant		0,605	0,546
		Defender/Reactor	-0,173	-2,677	0,008
		Prospector	0,111	1,522	0,130
		Analyser	-0,008	-0,110	0,912
		Geographical location (Urban/Rural)	-0,077	-1,024	0,307
	Interaction effects	Defender/Reactor*Geographical location	0,016	0,232	0,817
		Prospector* Geographical location	-0,085	-1,224	0,223
		Analyser* Geographical location	-0,035	-0,505	0,614
	Pharmacy „socio-demographic" Control variables	Ownership structure	0,051	0,773	0,441
		Equity based cooperation	-0,016	-0,258	0,797
		Relationship based cooperation	0,050	0,786	0,433
		Total area of space of pharmacy	0,108	1,356	0,177
		Total area of officina	-0,075	-0,969	0,334
		Number of employees	0,469	6,433	0,000
	Control variables regarding locational and site attributes	There is a hospital, physician's office or nursing home in the vicinity of our pharmacy	0,087	1,401	0,163
		There are shopping malls, hypermarkets, or other kinds of retailers (e.g. shops) in the vicinity of our pharmacy	-0,033	-0,491	0,624
		There is a drugstore or gas-station close to our pharmacy	0,012	0,186	0,853
		There are many competitor pharmacies in our vicinity	0,065	0,908	0,365
		Our pharmacy operates in a shopping-mall or hypermarket	-0,011	-0,168	0,867
		A significant number of people passes by our pharmacy	0,017	0,270	0,788

Source: Table made by the author

Table LXXXVII: Explanatory power of regression models exploring the potential moderating effect of GL in the relationship between SO and NP

MODEL SUMMARY (Sales)					Change statistics				
Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. R^2 Change
1	0,485	0,235	0,217	128,27242	0,235	13,503	4	176	0,000
2	0,490	0,241	0,210	128,89497	0,006	0,435	3	173	0,728
3	0,681	0,463	0,422	110,27906	0,223	11,556	6	167	0,000
4	0,690	0,476	0,414	111,02523	0,012	0,627	6	161	0,708

Source: Table made by the author

Table LXXXVIII: Moderating effect of GL in the relationship between SO and sales

Geographical location	Strategic orientation	β	T value	Sig.
Urban	Constant		21,836	0,000
	Defender/Reactor	-0,160	-1,567	0,120
	Prospector	0,276	2,958	0,004
	Analyser	-0,028	-0,289	0,773
Rural	Constant		23,428	0,000
	Defender/Reactor	-0,332	-3,526	0,001
	Prospector	0,396	4,046	0,000
	Analyser	-0,290	-3,117	0,002

Source: Table made by the author

Table LXXIX: Explanatory power of regression models demonstrating the potential moderating effect of GL in the relationship between SO and sales

Model summary (sales)						Change statistics				
Urban/ Rural	Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. F Change
Urban	1	0,362	0,131	0,108	148,25948	0,131	5,719	3	114	0,001
Rural	2	0,583	0,340	0,316	89,27101	0,340	14,577	3	85	0,000

Source: Table made by the author

Table XC: Potential moderating effect of GL in the relationship between SO and NP

GEOGRAPHICAL LOCATION AND NET PROFIT			β	T value	Sig.
1. MODEL	Main effects	Constant		8,516	0,000
		Defender/Reactor	-0,078	-1,004	0,317
		Prospector	0,090	1,064	0,289
		Analyser	-0,073	-0,864	0,389
		Geographical location (Urban/Rural)	-0,148	-1,976	0,059
2. MODEL	Main effects	Constant		8,505	0,000
		Defender/Reactor	-0,086	-1,094	0,275
		Prospector	0,085	0,993	0,322
		Analyser	-0,080	-0,939	0,349
		Geographical location (Urban/Rural)	-0,139	-1,802	0,073
	Interaction effects	Defender/Reactor*Geographical location	-0,093	-1,187	0,237
		Prospector*Geographical location	0,010	0,113	0,910
		Analyser*Geographical location	-0,019	-0,225	0,822
3. MODEL	Main effects	Constant		-0,218	0,828
		Defender/Reactor	-0,056	-0,705	0,482
		Prospector	0,011	0,132	0,895
		Analyser	-0,058	-0,685	0,494
		Geographical location (Urban/Rural)	-0,083	-1,004	0,317
	Interaction effects	Defender/Reactor*Geographical location	-0,087	-1,111	0,268
		Prospector*Geographical location	-0,056	-0,651	0,516
		Analyser*Geographical location	0,014	0,165	0,869
	Pharmacy „socio-demographic" Control variables	Ownership structure	0,017	0,221	0,826
		Equity based cooperation	-0,045	-0,581	0,562
		Relationship based cooperation	0,030	0,385	0,701
		Total area of space of pharmacy	0,224	2,309	0,022
		Total area of officina	-0,005	-0,055	0,956
		Number of employees	0,170	1,930	0,050
4. MODEL	Main effects	Constant		-0,976	0,331
		Defender/Reactor	-0,047	-0,587	0,558
		Prospector	-0,024	-0,260	0,795
		Analyser	-0,055	-0,628	0,531
		Geographical location (Urban/Rural)	-0,088	-0,938	0,349
	Interaction effects	Defender/Reactor*Geographical location	-0,074	-0,889	0,375
		Prospector* Geographical location	-0,048	-0,552	0,582
		Analyser* Geographical location	0,015	0,180	0,857
	Pharmacy „socio-demographic" Control variables	Ownership structure	-0,004	-0,044	0,965
		Equity based cooperation	-0,061	-0,782	0,435
		Relationship based cooperation	0,051	0,654	0,514
		Total area of space of pharmacy	-0,248	2,507	0,013
		Total area of officina	-0,005	-0,054	0,957
		Number of employees	0,162	1,784	0,076
	Control variables regarding locational and site attributes	There is a hospital, physician's office or nursing home in the vicinity of our pharmacy	0,107	1,379	0,170
		There are shopping malls, hypermarkets, or other kinds of retailers (e.g. shops) in the vicinity of our pharmacy	0,127	1,528	0,128
		There is a drugstore or gas-station close to our pharmacy	-0,106	-1,270	0,206
		There are many competitor pharmacies in our vicinity	-0,025	-0,284	0,777
		Our pharmacy operates in a shopping-mall or hypermarket	0,100	1,206	0,230
		A significant number of people passes by our pharmacy	0,011	0,131	0,896

Source: Table made by the author

Table XCI: Explanatory power of regression models demonstrating the potential moderating effect of GL in the relationship between SO and NP

MODEL SUMMARY (Net Profit)					Change statistics				
Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. R^2 Change
1	0,211	0,044	0,023	14,183663	0,044	2,049	4	176	0,090
2	0,232	0,054	0,016	14,235542	0,009	0,573	3	173	0,633
3	0,389	0,151	0,085	13,723275	0,097	3,193	6	167	0,002

4	0,431	0,186	0,090	13,687650	0,035	1,145	6	161	0,339

Source: Table made by the author

Table XCII: Moderating effect of geographical location between SO and NP

Geographical location	Strategic orientation	β	T value	Sig.
Urban	Constant		6,399	0,000
	Defender/Reactor	0,028	0,254	0,800
	Prospector	0,056	0,564	0,574
	Analyser	0,028	0,263	0,793
Rural	Constant		8,228	0,000
	Defender/Reactor	-0,308	-2,958	0,004
	Prospector	0,199	1,832	0,051
	Analyser	-0,190	-1,768	0,081

Source: Table made by the author

Table XCIII: Moderating effect of GL in the relationship between SO and NP

Model summary (net profit)						Change statistics				
Urban/ Rural	Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	R^2 Change	F Change	Df1	Df2	Sig. F Change
Urban	1	0,068	0,005	-0,022	16,853475	0,005	0,178	3	114	0,911
Rural	2	0,393	0,155	0,124	7,562201	0,155	5,005	3	82	0,003

Forrás: Table made by the author

Table XCIV: The correlation between socio-demographic characteristics, locational and site attributes of the pharmacies and the BP indicators (sales and net profit)

Items	Sales	Net Profit
There is a hospital, doctor's office or nursing home in the vicinity of our pharmacy	0,203**	0,142*
There are shopping malls, hypermarkets, or other kinds of retailers (e.g. shops) in the vicinity of our pharmacy	0,088	0,146*
There is a drugstore or gas-station close to our pharmacy	0,252**	0,102
There are many competitor pharmacies in our vicinity	0,250**	0,096
Our pharmacy operates in a shopping-mall or hypermarket	0,048	0,091
A significant number of people passes by our pharmacy	0,256**	0,151*
Does the pharmacy operate in an urban or rural area?	-0,340**	-0,143*
Ownership structure: Only pharmacists/family members/friends VS. not only pharmacists/family members/friends	0,158*	0,064
Does the pharmacy take part in any kind of equity based cooperation (e.g. chain)?	0,019	-0,033
Does the pharmacy take part in any kind of strategic alliance and/or procurement association?	0,187**	0,115
Total area of space of the pharmacy?	0,287**	0,293**
Total area of the officina?	0,228**	0,191**
How many employees does the pharmacy have in total?	0,611**	0,274**

Note: *: significant, if p value is less than 0,05 and **: significant, if p is less than 0,01
Source: Table made by the author

Table XCV: The relationship between strategic orientations and sales of pharmacies

STRUCTURAL EQUATION MODELING			
Independent variable	Dependent variable	β	Sig.
Prospector	Sales	0,327	0,000
Analyser	Sales	-0,073	0,322
Defender/Reactor	Sales	-0,224	0,008

Source: Table made by the author

Table XCVI: Differences in sales of pharmacies exhibiting different SOs of M&S

DESCRIPTIVES REVENUE								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Defender/ Reactor	89	217,5956	113,10189	11,98878	193,7704	241,4207	65,00	642,00
Prospector	56	362,4353	158,02752	21,11732	320,1153	404,7554	90,18	745,49
Analyser	62	268,2519	139,31053	17,69245	232,8736	303,6301	67,00	670,00
Total	207	271,9517	146,23670	10,16415	251,9126	291,9908	65,00	745,49

ANOVA REVENUE					
	Sum of squares	Degrees of freedom	Mean Square	F Value	Sig.
Between Groups	722295,366	2	361147,683	20,004	0,000
Within Groups	3683050,455	204	18054,169		
Total	4405345,821	206			

Source: Table made by the author

Table XCVII: Pairwise differences between sales exhibited by Prospector, Analyser, Defender/Reactor strategic orientations

Dependent Variable		(I) CLASSIFICATIONSEGEV3	(J) CLASSIFICATIONSEGEV3	Sig.
SALES	Tukey HSD	Defender/Reactor	Prospector	,000*
			Analyser	,031
		Prospector	Defender/Reactor	,000*
			Elemző	,001*
		Analyser	Defender/Reactor	,031
			Prospector	,001*
	Scheffe	Defender/Reactor	Prospector	,000*
			Analyser	,047
		Prospector	Defender/Reactor	,000*
			Analyser	,001*
		Analyser	Defender/Reactor	,047
			Prospector	,001*
	Bonferroni	Defender/Reactor	Prospector	,000*
			Analyser	,071
		Prospector	Defender/Reactor	,000*
			Analyser	,001*
		Analyser	Defender/Reactor	,071
			Prospector	,001*

Source: Table made by the author

Table XCVIII: The relationship between SOs and net profit of pharmacies

STRUCTURAL EQUATION MODELING			
Independent variables	**Dependent variable**	**β**	**Sig.**
Prospector	Net profit	0,108	0,210
Analyser	Net profit	0,020	0,806
Defender/Reactor	Net profit	-0,080	0,361

Source: Table made by the author

Table XCIX: Differences in NP of pharmacies following different SOs of M&S

DESCRIPTIVES (NET PROFIT)								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Defender/ Reactor	89	6,75708	15,595219	1,653090	3,47191	10,04225	-9,500	135,000
Prospector	56	11,34147	11,721860	1,566399	8,20234	14,48060	-5,943	40,000
Analyser	62	8,43076	12,604785	1,600809	5,22974	11,63178	-11,639	70,000
Total	207	8,49860	13,825224	,960919	6,60410	10,39310	-11,639	135,000

ANOVA NET PROFIT					
	Sum of squares	Degrees of freedom	Mean Square	F Value	Sig.
Between Groups	722,799	2	361,399	1,907	0,151
Within Groups	38651,383	204	189,468		
Total	39374,182	206			

Source: Table made by the author

Table C: Pairwise differences in NP realised by Prospectors, Analysers, Defender/Reactors

Dependent Variable		(I) CLASSIFICATIONSEGEV3	(J) CLASSIFICATIONSEGEV3	Sig.
NET PROFIT	Tukey HSD	Defender/Reactor	Prospector	,127
			Analyser	,743
		Prospector	Defender/Reactor	,127
			Analyser	,486
		Analyser	Defender/Reactor	,743
			Prospector	,486
	Scheffe	Defender/Reactor	Prospector	,151
			Analyser	,764
		Prospector	Defender/Reactor	,151
			Analyser	,519
		Analyser	Defender/Reactor	,764
			Prospector	,519
	Bonferroni	Defender/Reactor	Prospector	,157
			Analyser	1,000
		Prospector	Defender/Reactor	,157
			Analyser	,758
		Analyser	Defender/Reactor	1,000
			Prospector	0,758

Source: Table made by the author

Table CI: The moderating effect of PEU in the relationship between SO and sales

MULTIGROUP MODERATION		High perceived environmental uncertainty		Low perceived environmental uncertainty	
Indeoendent Variable	**Dependent Variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	0,401	0,000	0,248	0,033
Defender/Reactor	Sales	-0,147	0,199	-0,334	0,009
Analyser	Sales	-0,174	0,088	0,021	0,850

Source: Table made by the author

Table CII: Moderating effect of PEU in the relationship of SO and pharmacies' SAL

INTERACTION MODERATION			
Independent variable	**Dependent variable**	**β**	**Sig.**
Prospector	Sales	0,342	0,000
(PEU) * Prospector	Sales	-0,057	0,448
Defender/Reactor	Sales	-0,257	0,000
PEU * Defender/Reactor	Sales	-0,162	0,027
Analyser	Sales	-0,073	0,306
PEU * Analyser	Sales	0,095	0,167
PEU	Sales	0,068	0,289

Source: Table made by the author

Table CIII: Moderating effect of PEU in the relationship between SO and NP

MULTIGROUP MODERATION		High perceived environmental uncertainty		Low perceived environmental uncertainty	
Independent variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Net profit	0,153	0,201	0,056	0,630
Defender/Reactor	Net profit	-0,241	0,059	0,0012	0,918
Analyser	Net profit	-0,114	0,282	0,085	0,482

Source: Table made by the author

Table CIV: Moderating effect of PEU in the relationship between SO and pharmacies' NP

INTERACTION MODERATION			
Independent variable	**Dependent variable**	**β**	**Sig.**
Prospector	Net profit (NP)	0,094	0,260
PEU * Prospector	NP	-0,034	0,684
Defender/Reactor	NP	-0,074	0,378
PEU * Defender/Reactor	NP	0,045	0,589
Analyser	NP	0,003	0,966
PEU * Analyser	NP	0,060	0,442
PEU	NP	0,083	0,252

Source: Table made by the author

Table CV: Moderating effect of GL in the relationship of SO and pharmacies' SAL

INTERACTION MODERATION			
Independent variable	**Dependent variable**	**β**	**Sig.**
Prospector	Sales	0,321	0,000
Prospector * Geographical location (Urban/Rural)	Sales	-0,024	0,727
Defender/Reactor	Sales	-0,206	0,005
Defender/Reactor * Geographical location (Urban/Rural)	Sales	-0,053	0,456
Analyser	Sales	-0,108	0,107
Analyser * Geographical location	Sales	-0,077	0,244

(Urban/Rural)			
Geographical location	Sales	-0,243	0,000

Source: Table made by the author

Table CVI: The moderating effect of GL in the relationship between SO and SAL

MULTIGROUP MODERATION		Urban		Rural	
Independent variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	0,279	0,015	0,384	0,002
Defender/Reactor	Sales	-0,134	0,280	-0,325	0,030
Analyser	Sales	-0,023	0,845	-0,302	0,013

Source: Table made by the author

Table CVII: Moderating effect of GL in the relationship between SO and pharmacies' NP

INTERACTION MODERATION			
Independent variable	**Dependent variable**	**β**	**Sig.**
Prospector	Net profit (NP)	0,111	0,164
Prospector * Geographic location (Urban vs. Rural)	NP	0,026	0,742
Defender/Reactor	NP	-0,103	0,224
Defender/Reactor * Geographic location	NP	-0,104	0,203
Analyser	NP	-0,022	0,778
Analyser * Geographic location	NP	-0,091	0,233
Geographic location	NP	-0,100	0,153

Source: Table made by the author

Table CVIII: Moderating effect of GL in the relationship of SO and NP of pharmacies

MULTIGROUP MODERATION		Urban		Rural	
Independent variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Net profit	0,037	0,741	0,244	0,039
Defender/Reactor	Net profit	0,006	0,961	-0,342	0,028
Analyser	Net profit	0,079	0,524	-0,271	0,029

Source: Table made by the author

Table CIX: Combined moderating effect of PEU and GL in the relationship of SO and SAL

MODERATED MODERATION		Urban		Rural	
Independent variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	0,311	0,002	0,342	0,000
Perceived environmental uncertainty (PEU) * Prospector	Sales	-0,023	0,814	-0,214	0,055
Defender/Reactor	Sales	-0,158	0,143	-0,304	0,002
PEU * Defender/Reactor	Sales	-0,188	0,085	-0,153	0,222
Analyser	Sales	-0,082	0,439	-0,180	0,081
PEU * Analyser	Sales	0,124	0,253	0,125	0,241
PEU	Sales	0,181	0,041	-0,019	0,856

Source: Table made by the author

Table CX: Combined moderating effect of PEU and GL in the relationship of SO and NP

MODERATED MODERATION		Urban		Rural	
Independent variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Net profit (NP)	0,020	0,857	0,174	0,100
PEU * Prospector	NP	0,017	0,876	-0,260	0,024
Defender/Reactor	NP	0,004	0,974	-0,298	0,003
PEU * Defender/Reactor	NP	0,131	0,277	0,069	0,592
Analyser	NP	0,007	0,955	-0,166	0,12
PEU * Analyser	NP	-0,017	0,884	0,193	0,078
PEU	NP	0,228	0,019	-0,164	0,137

Source: Table made by the author

Table CXI: Combined moderating effect of PEU and GL in the relationship between SO and SAL by controling for relevant, industry-specific variables

MODERATED MODERATION		Urban		Rural	
Independet variable	**Dependent variable**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Sales	0,262	0,010	0,204	0,049
PEU * Prospector	Sales	-0,030	0,761	-0,205	0,052
Defender/Reactor	Sales	-0,219	0,043	-0,232	0,017
PEU * Defender/Reactor	Sales	-0,196	0,073	-0,101	0,391
Analyser	Sales	-0,089	0,389	-0,130	0,089
PEU * Analyser	Sales	0,080	0,450	0,162	0,080
PEU	Sales	0,163	0,061	-0,045	0,667
TELEPHELYMEDICAL	Sales	0,124	0,157	0,040	0,685
TELEPHELYDROG_BENZ	Sales	0,045	0,598	0,096	0,366
TELEPHELYCOMP	Sales	0,016	0,864	0,044	0,644
TELEPHELYSTREETWALK	Sales	0,027	0,765	0,200	0,041
TULAJSZERKEZET	Sales	0,046	0,592	-0,031	0,720
RELATIONSHIPCOOPERATION	Sales	0,111	0,196	0,071	0,452
TELJESALAPTERÜLET	Sales	0,213	0,018	0,149	0,112

Source: Table made by the author

Table CXII: Combined moderating effect of PEU and GL in the relationship between SO and NP by integrating the relevant, industry-specific control variables

MODERATED MODERATION		Urban		Rural	
Indpendent variable	**Dependent veraible**	**β**	**Sig.**	**β**	**Sig.**
Prospector	Net profit (NP)	-0,066	0,561	0,051	0,631
Perceived environmental uncertainty (PEU) * Prospector	NP	-0,023	0,826	-0,274	0,009
Defender/Reactor	NP	-0,045	0,696	-0,276	0,005
PEU * Defender/Reactor	NP	0,156	0,182	0,074	0,532
Analyser	NP	0,037	0,743	-0,157	0,121
PEU * Analyser	NP	-0,006	0,959	0,230	0,022
PEU	NP	0,197	0,035	-0,132	0,200
TELJESALAPTERÜLET	NP	0,222	0,023	0,322	0,000
TELEPHELYSTREETWALK	NP	-0,019	0,845	0,171	0,070
TELEPHELYSHOPPING	NP	0,194	0,042	-0,029	0,762
TELEPHELYMEDICAL	NP	0,112	0,233	-0,056	0,558

Source: Table made by the author

Table CXXI: Correlation between behavioural attributes of M&S's SOs and BP indicators

	Strategic behavioural characteristics	Sales	Net profit
Defender/Reactor	Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments.	-0,301**	-0,089
	Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently.	-0,162*	-0,071
	Compared to competitors our pharmacy offers a narrower range of products and services.	-0,287**	-0,022
	Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors.	-0,05	0,008
	The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services.	-0,267**	-0,103
	Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation.	-0,183**	0,004
	Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care.	-0,299**	-0,141*
	Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications.	-0,285**	-0,103
	Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments.	-0,248**	-0,143*
	Our pharmacy seldom takes business risks.	-0,267**	-0,054
	Our pharmacy often acts upon the direct pressures of the market and regulatory environments.	-0,149*	-0,028
Prospector	Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care.	0,345**	0,113
	Compared to our competitors our pharmacy offers a wider variety of pharmaceutical products and services.	0,339**	0,090
	The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes.	0,244**	0,101
	We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry.	0,224**	0,054
	Our pharmacy reacts quickly to early signals of business opportunities discovered in the changes of market and regulatory environments	0,298**	0,165
	It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable.	0,154*	-0,037
	Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us.	0,350**	0,167*
	Our pharmacy has competitive advantage in all product and service domains that it offers.	0,361**	0,208**
	In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients.	0,129	-0,027
Analyser	Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications.	-0,181*	-0,146*
	Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market.	-0,070	-0,020
	The products and services offered by our pharmacy are characterised by continuous but moderate changes.	-0,047	0,043
	Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market.	-0,053	0,025
	Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price.	0,001	-0,011
	Compared to our competitors our pharmacy offers novelties with higher quality patient care and accompanied by more additional services.	0,071	0,131
	Our pharmacy keeps a close eye on and carefully monitors actions taken by competitor pharmacies.	0,071	0,071
	Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market.	-0,145*	-0,024
	To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors.	-0,001	0,056

Source: Table made by the author

Note: *: significant if p value is less than 0,05 and **: significant if p is less than 0,01

Table CXXII: Effect of M&S's SOs' behavioural characteristics on sales of pharmacies

Strategic behavioural characteristic	β	Sig.
Constant		0,000
Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments.	-0,106	0,333
Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently.	0,084	0,353
Compared to competitors our pharmacy offers a narrower range of products and services.	-0,068	0,505
Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors	0,214	0,019
The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services.	-0,139	0,126
Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation.	0,004	0,962
Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care.	-0,140	0,180
Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications.	-0,069	0,510
Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments	-0,065	0,477
Our pharmacy seldom takes business risks.	0,064	0,494
Our pharmacy often acts upon the direct pressures of the market and regulatory environments.	-0,042	0,602
Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care.	0,230	0,054
Compared to our competitors our pharmacy offers a wider variety of pharmaceutical products and services.	-0,067	0,566
The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes.	-0,035	0,703
We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry.	-0,064	0,516
Our pharmacy reacts quickly to early signals of business opportunities discovered in the changes of market and regulatory environments.	0,095	0,353
It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable	-0,013	0,869
Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us	0,185	0,040
Our pharmacy has competitive advantage in all product and service domains that it offers.	0,179	0,060
In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients.	-0,083	0,328
Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications.	-0,121	0,170
Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market.	-0,023	0,817
The products and services offered by our pharmacy are characterised by continuous but moderate changes.	0,089	0,437
Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market.	-0,004	0,973
Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price.	0,074	0,452
Compared to our competitors our pharmacy offers novelties with higher quality customer care and accompanied by more additional services.	-0,183	0,054
Our pharmacy keeps a close eye on and carefully monitors actions taken by competitor pharmacies.	-0,089	0,301
Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market.	0,013	0,882
To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors.	-0,016	0,854

Source: Table made by the author

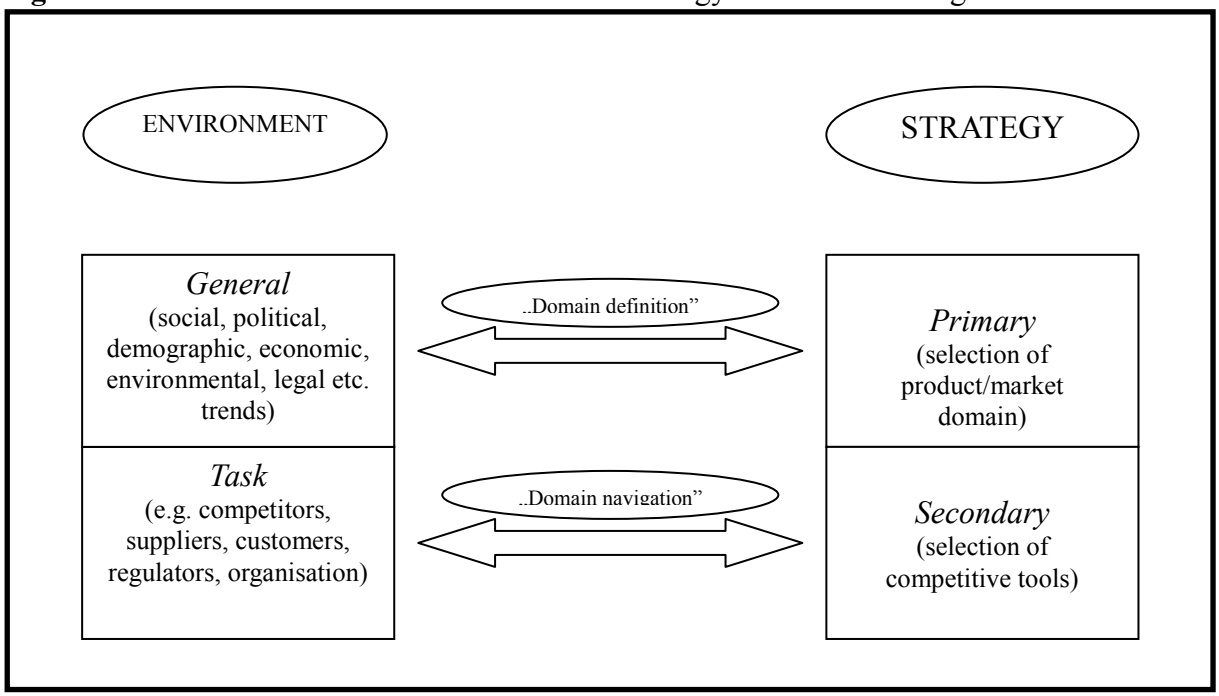
Table CXXIII: Effect of M&S's SOs' behavioural characteristics on NP of pharmacies

Strategic behavioural characteristics	β	Sig.
Constant		0,545
Our pharmacy strives to locate a stable market niche by providing conventional pharmaceutical products and services its usual patient segments.	-0,002	0,988
Our pharmacy tries to maintain a product and service portfolio, that does not need to be modified frequently.	-0,002	0,982
Compared to competitors our pharmacy offers a narrower range of products and services.	0,210	0,055
Our pharmacy attempts to keep and enhance its market position by placing more emphasis on providing higher quality services to patients than its competitors	0,053	0,585
The main focus of our pharmacy is to take advantage of the exploitation of opportunities in existing clients by providing them a relatively limited range of products and services.	-0,122	0,211
Our pharmacy pays special attention only to changes in market and regulatory environments directly influencing its operation.	0,056	0,550
Compared to its competitors our pharmacy aims to offer and maintain a narrower range of services of pharmacist's care.	-0,256	0,024
Our pharmacy strives to provide its patients a stable product and service portfolio that does not undergo frequent modifications.	-0,026	0,814
Our pharmacy insists on keeping its current product and service portfolio, and to serving its conventional patient segments	-0,138	0,162
Our pharmacy seldom takes business risks.	0,172	0,089
Our pharmacy often acts upon the direct pressures of the market and regulatory environments.	0,027	0,758
Our pharmacy can be considered amongst the most innovative enterprises in the sector when it comes to the introduction of new products and pharmaceutical services, and the implementation of business applications supporting better patient care.	0,157	0,219
Compared to our competitors our pharmacy offers a wider variety of pharmaceutical products and services.	-0,215	0,089
The composition, breadth and depth of the product and service portfolio offered by our pharmacy undergo periodic changes.	0,054	0,585
We believe that being first to introduce new pharmaceutical products, services and new business applications on the market grants serious competitive advantage in this industry.	-0,109	0,309
Our pharmacy reacts quickly to early signals of business opportunities discovered in the changes of market and regulatory environments.	0,171	0,121
It is not uncommon that efforts made by our pharmacy to introduce new products and pharmaceutical services turn out to be unsuccessful and unprofitable	-0,159	0,062
Actions taken by our pharmacy often influence the degree of competitive intensity among other pharmacies around us	0,080	0,404
Our pharmacy has competitive advantage in all product and service domains that it offers.	0,266	0,010
In recent years our pharmacy has been attempting to adapt its product and service portfolio to the ever changing needs and preferences of our patients.	-0,129	0,159
Our pharmacy is in no rush to introduce new and promising pharmaceutical products and services and to implement up-to-date business applications.	-0,205	0,032
Compared to its competitors our pharmacy simultaneously tries to maintain a narrower but stable product and pharmaceutical service domain while being open to introduce certain novelties on the market.	-0,026	0,807
The products and services offered by our pharmacy are characterised by continuous but moderate changes.	0,157	0,204
Our pharmacy carefully examines, which new products and pharmaceutical services worth to introduce on the market.	0,083	0,468
Compared to its competitors our pharmacy frequently offers products and services newly launched in the drug retail supply system at a lower price.	-0,060	0,572
Compared to our competitors our pharmacy offers novelties with higher quality customer care and accompanied by more additional services.	0,010	0,922
Our pharmacy keeps a close eye on and carefully monitors actions taken by competitor pharmacies.	-0,072	0,435
Our pharmacy is seldom among the first to introduce new pharmacological products, services and business applications to the market.	0,079	0,386
To maintain and enhance its market position our pharmacy keeps prices lower compared to its competitors.	0,070	0,461

Source: Table made by the author

49. Figures

Figure II: The interrelation of environment and strategy – theoretical integration



Source: Figure made by the author based on Bourgeois (1980a)

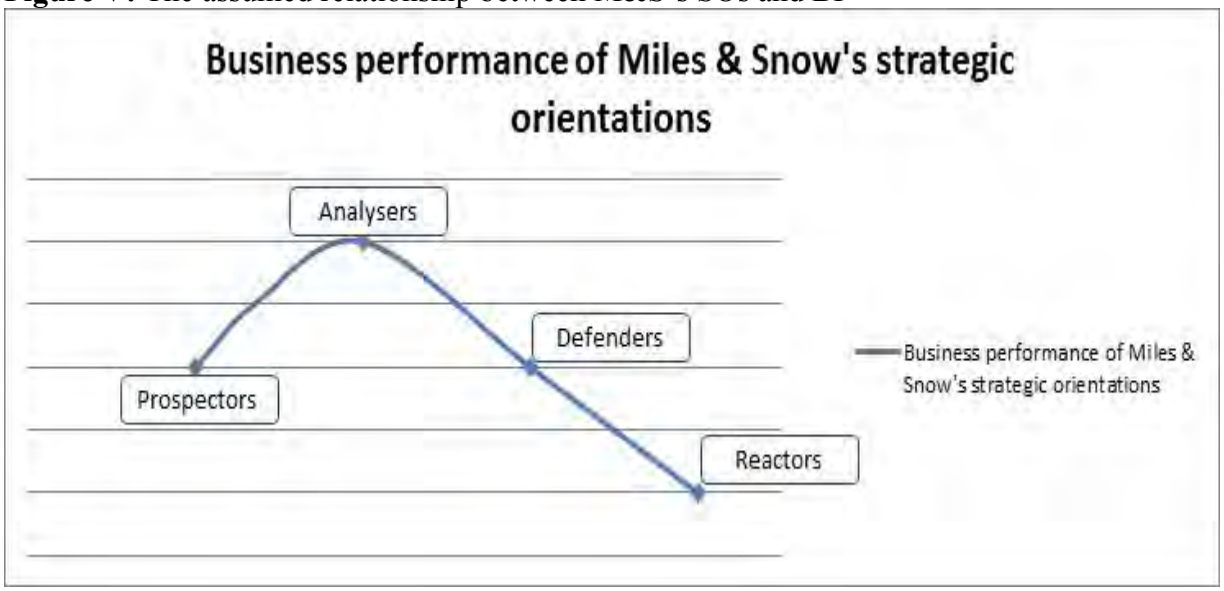
Figure III: The assumed business performance exhibited by M&S's SOs

Source: Figure made by the author based on Miles-Snow (1978), Miles et al., (1978) articles

Figure IV: Market effectiveness and financial efficiency of M&S's SOs

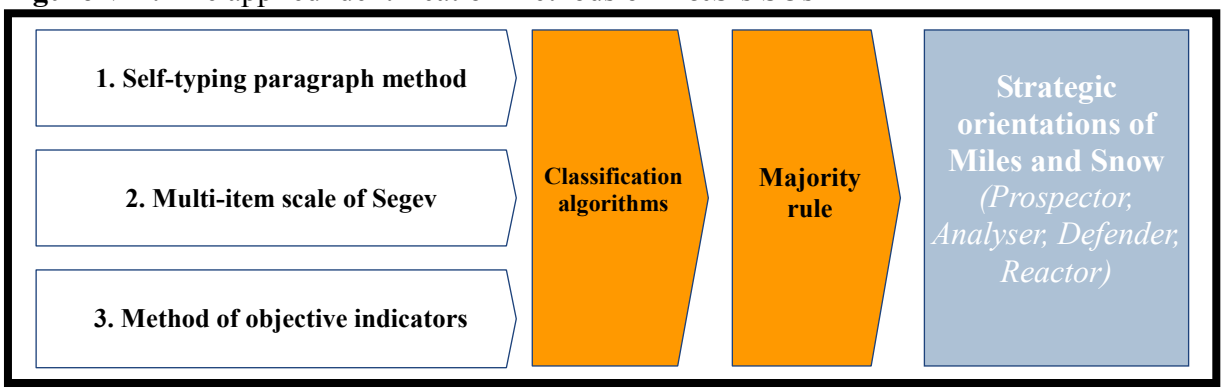
Source: Figure made by the author based on Hambrick (1983a)

Figure V: The assumed relationship between M&S's SOs and BP



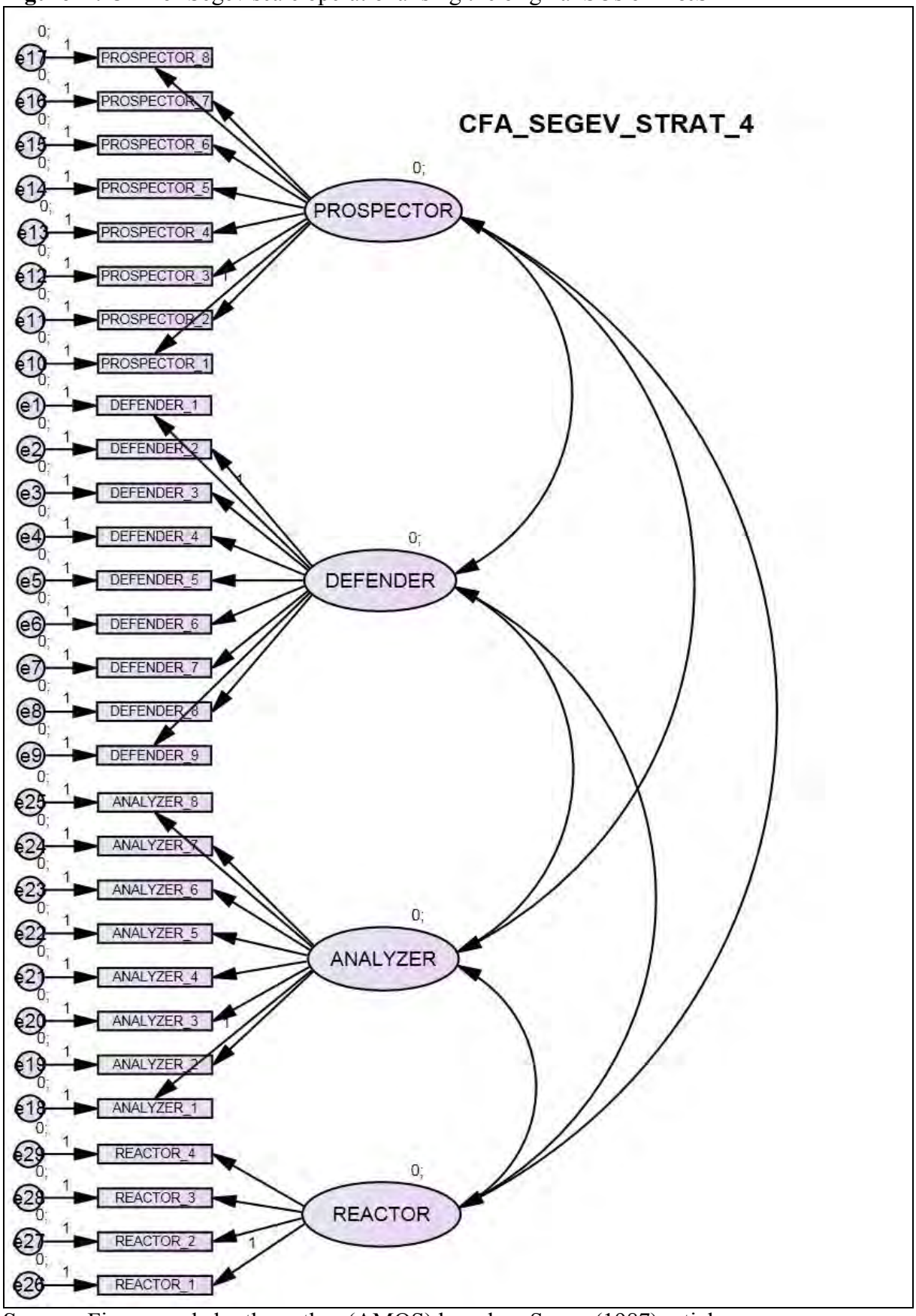
Source: Figure made by the author based on Bourgeois (1980a), McKee et al. (1989)

Figure VII: The applied identification methods of M&S's SOs



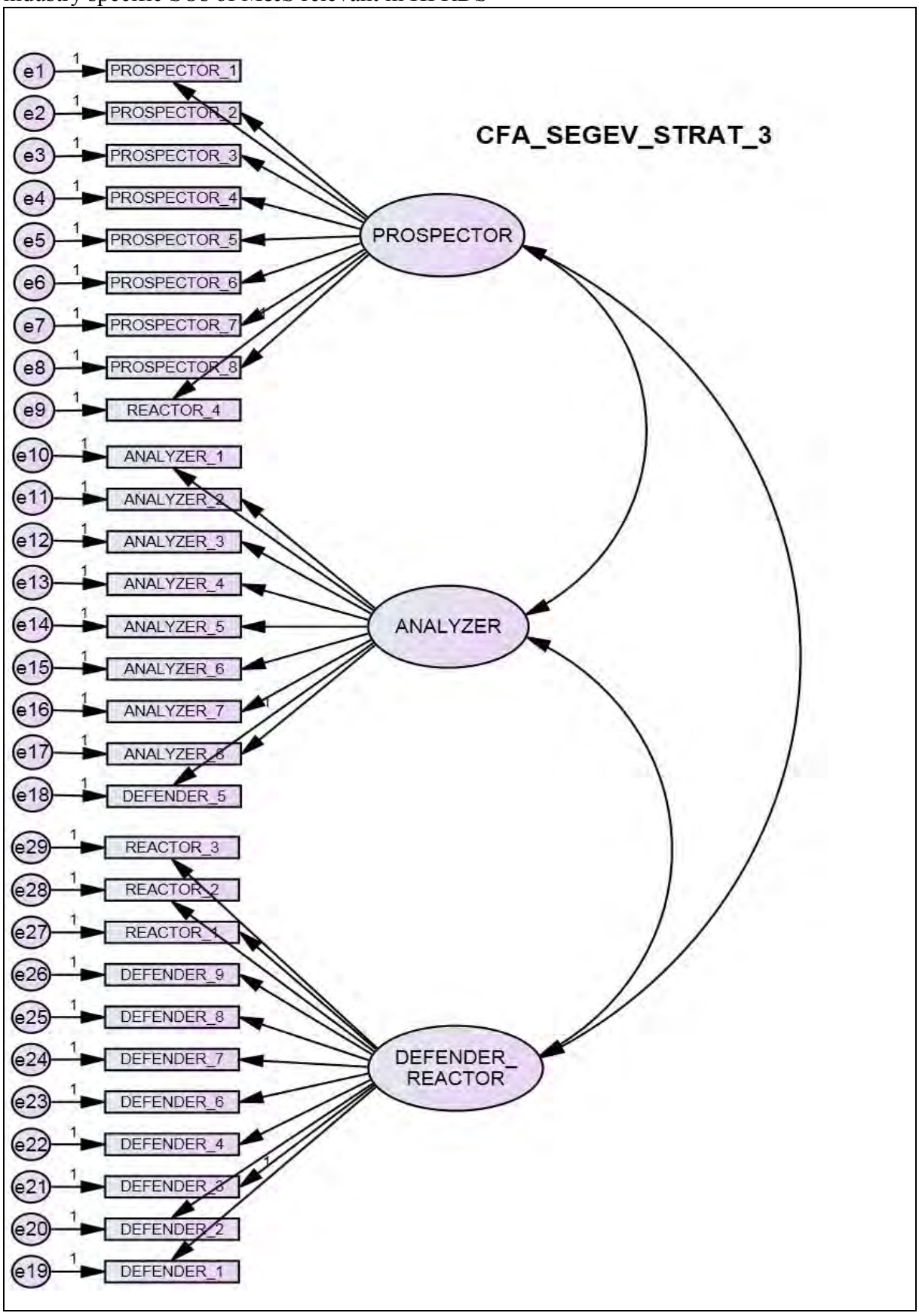
Source: Figure made by the author

Figure X: CFA of Segev scale operationalising the original SOs of M&S



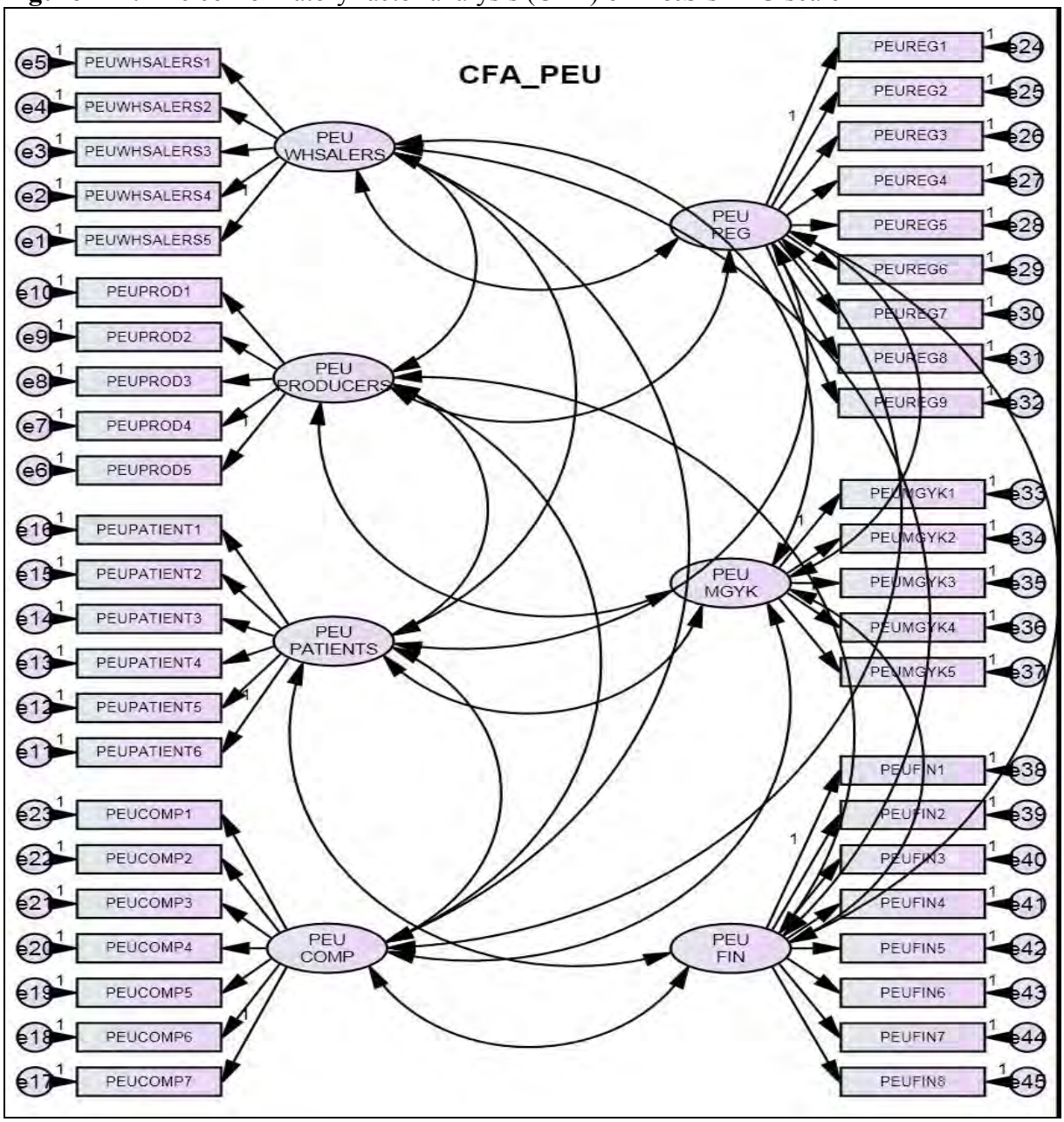
Source: Figure made by the author (AMOS) based on Segev (1987) article

Figure XI: The confirmatory factor analysis (CFA) of Segev scale operationalising the industry specific SOs of M&S relevant in HPRDS



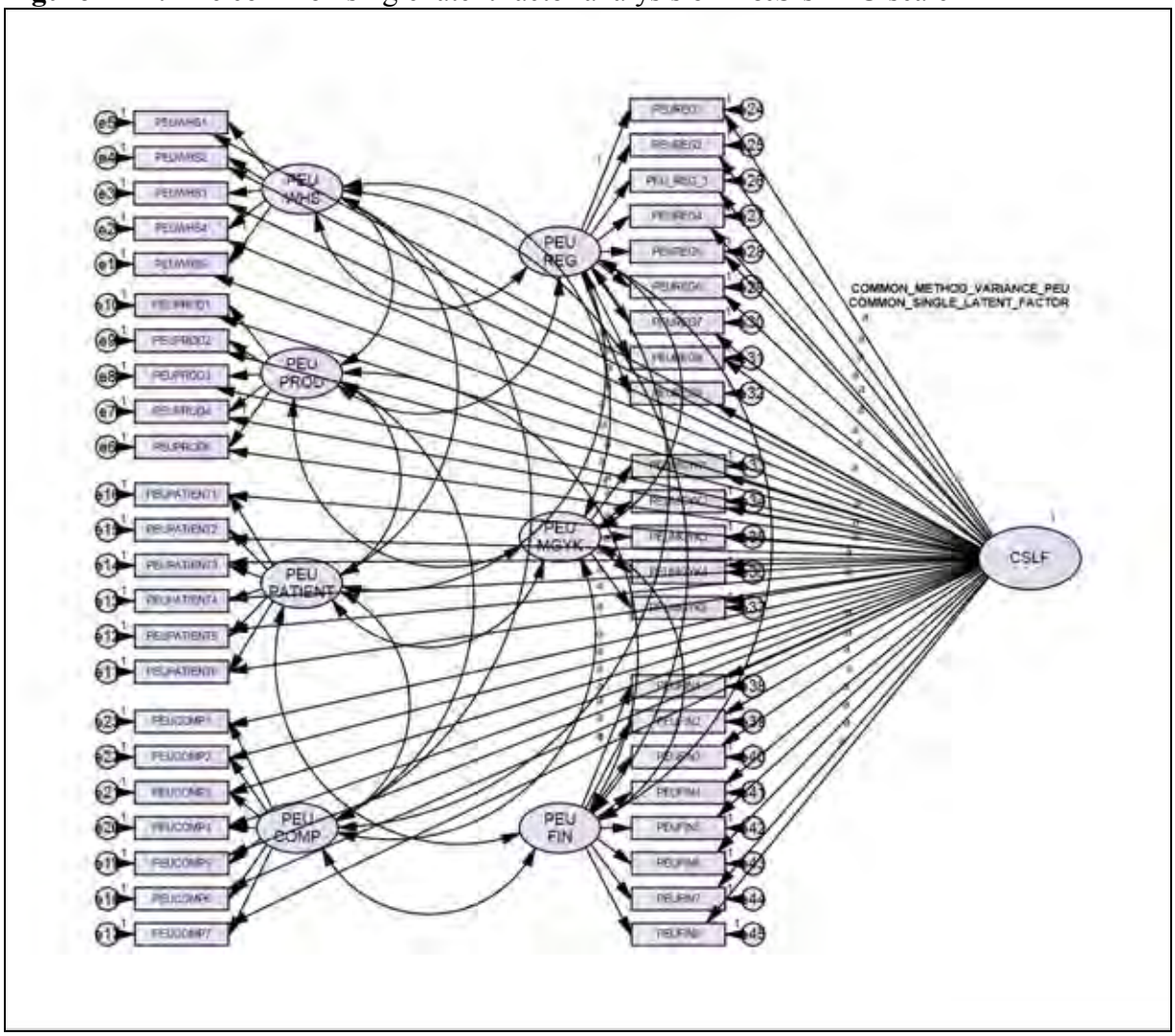
Source: Figure made by the author (SEM) based on Segev (1987) article

Figure XII: The conformatory factor analysis (CFA) of M&S's PEU scale



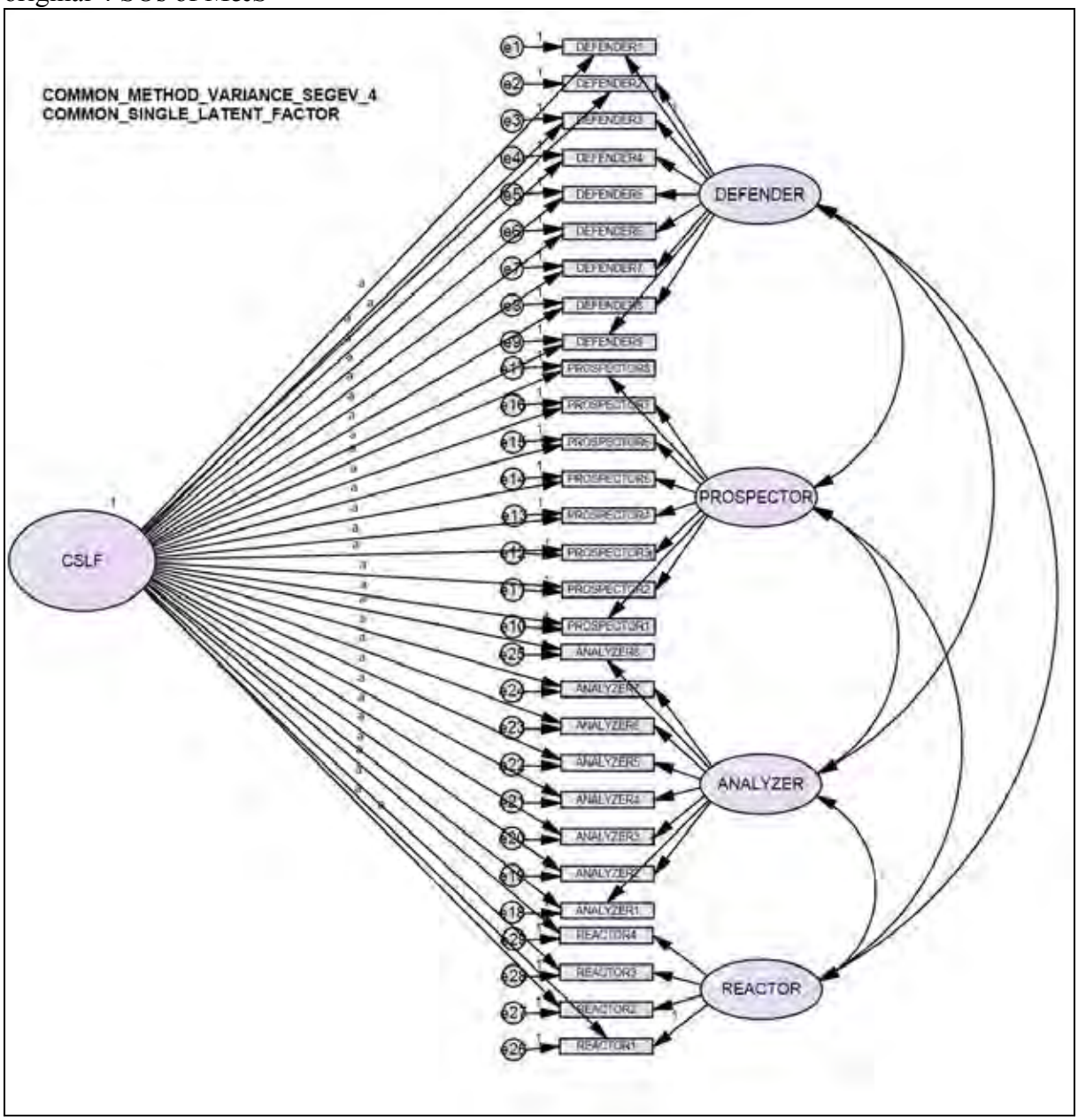
Source: Figure made by the author (AMOS) based on Miles and Snow (1978)

Figure XIII: The common single latent factor analysis of M&S's PEU scale



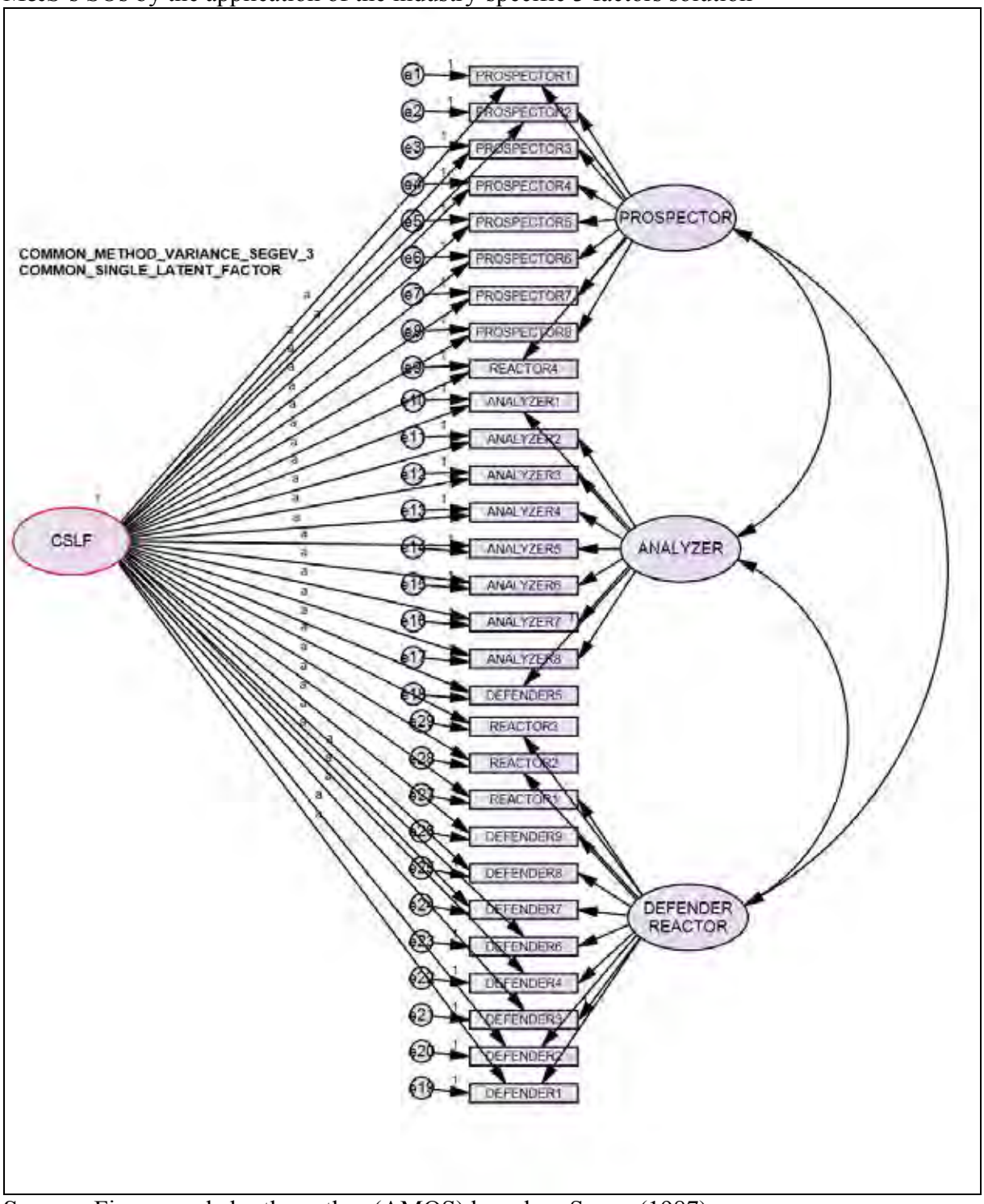
Source: Figure made by the author (AMOS) based on Miles and Snow (1978)

Figure XIV: The common single latent factor analysis of the Segev scale operationalising the original 4 SOs of M&S



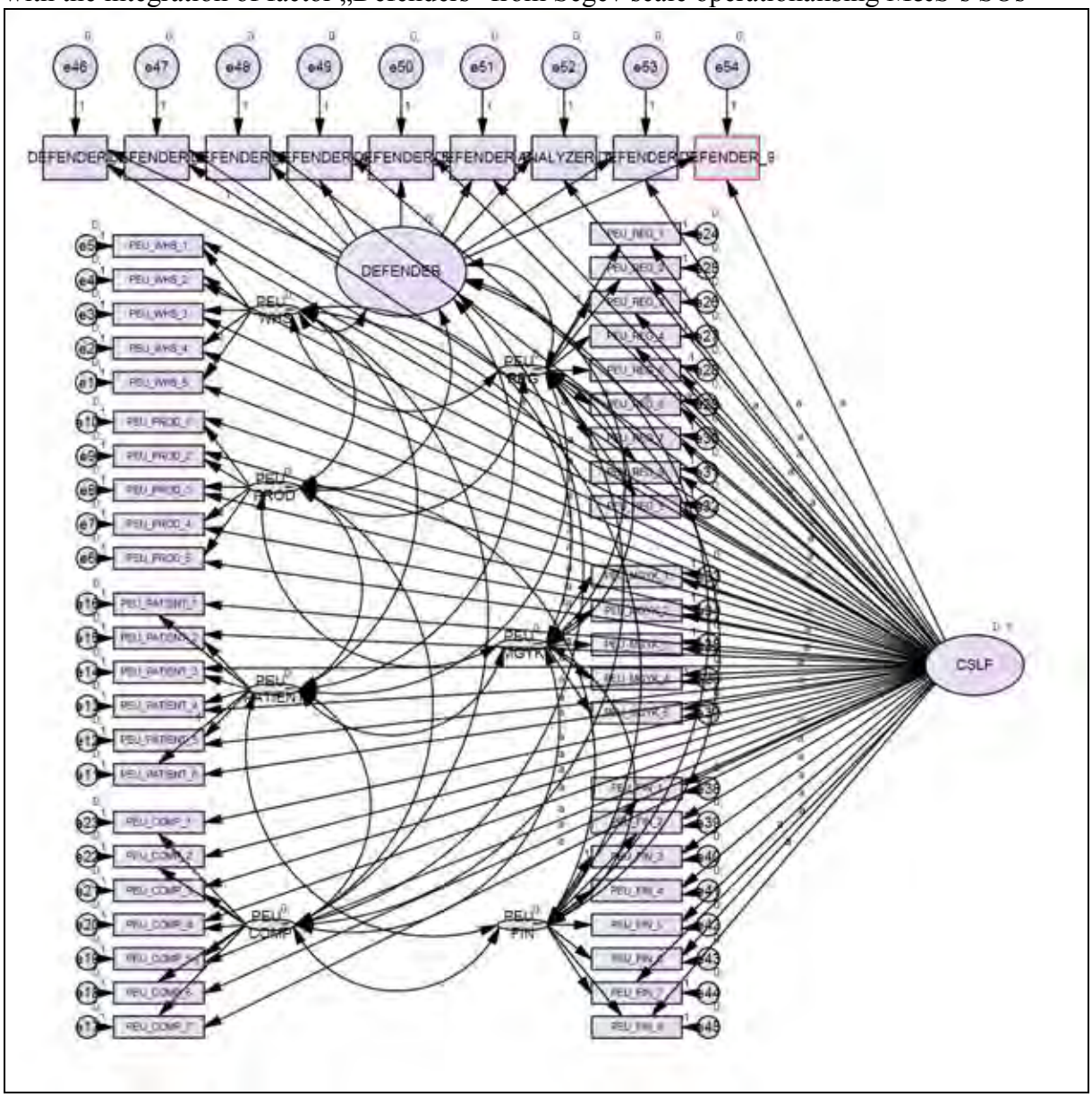
Source: Figure made by the author (AMOS) based on Segev (1987)

Figure XV: The common single latent factor analysis of the Segev scale operationalising M&S's SOs by the application of the industry-specific 3 factors solution



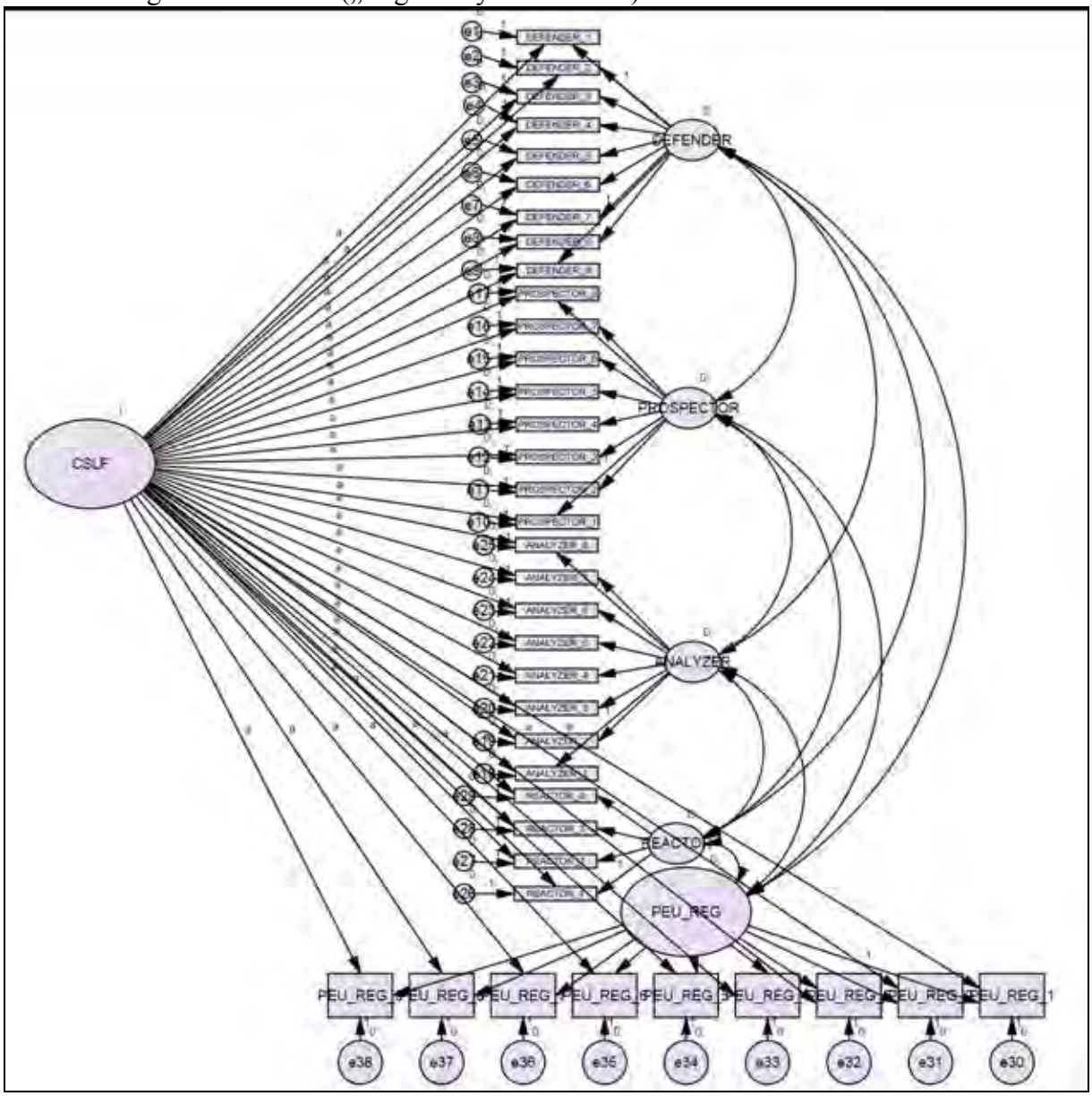
Source: Figure made by the author (AMOS) based on Segev (1987)

Figure XVI: Testing common method variance of PEU scale by marker variable technique with the integration of factor „Defenders" from Segev scale operationalising M&S's SOs



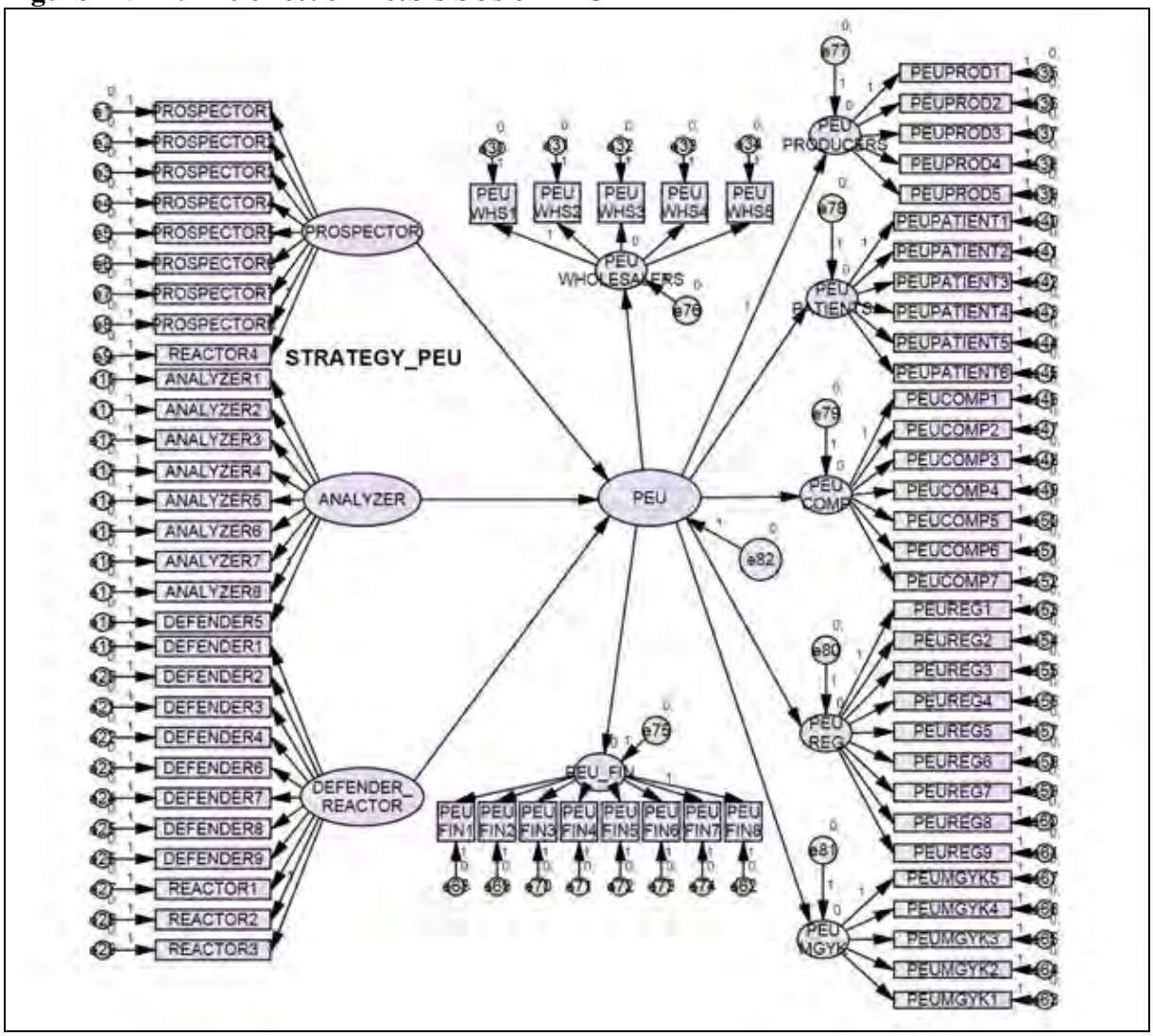
Source: Figure made by the author (AMOS) based on Miles-Snow (1978) and Segev (1987)

Figure XVII: Testing common method variance of Segev scale by marker variable technique with the integration of factor („Regulatory authorities") from M&S's PEU scale



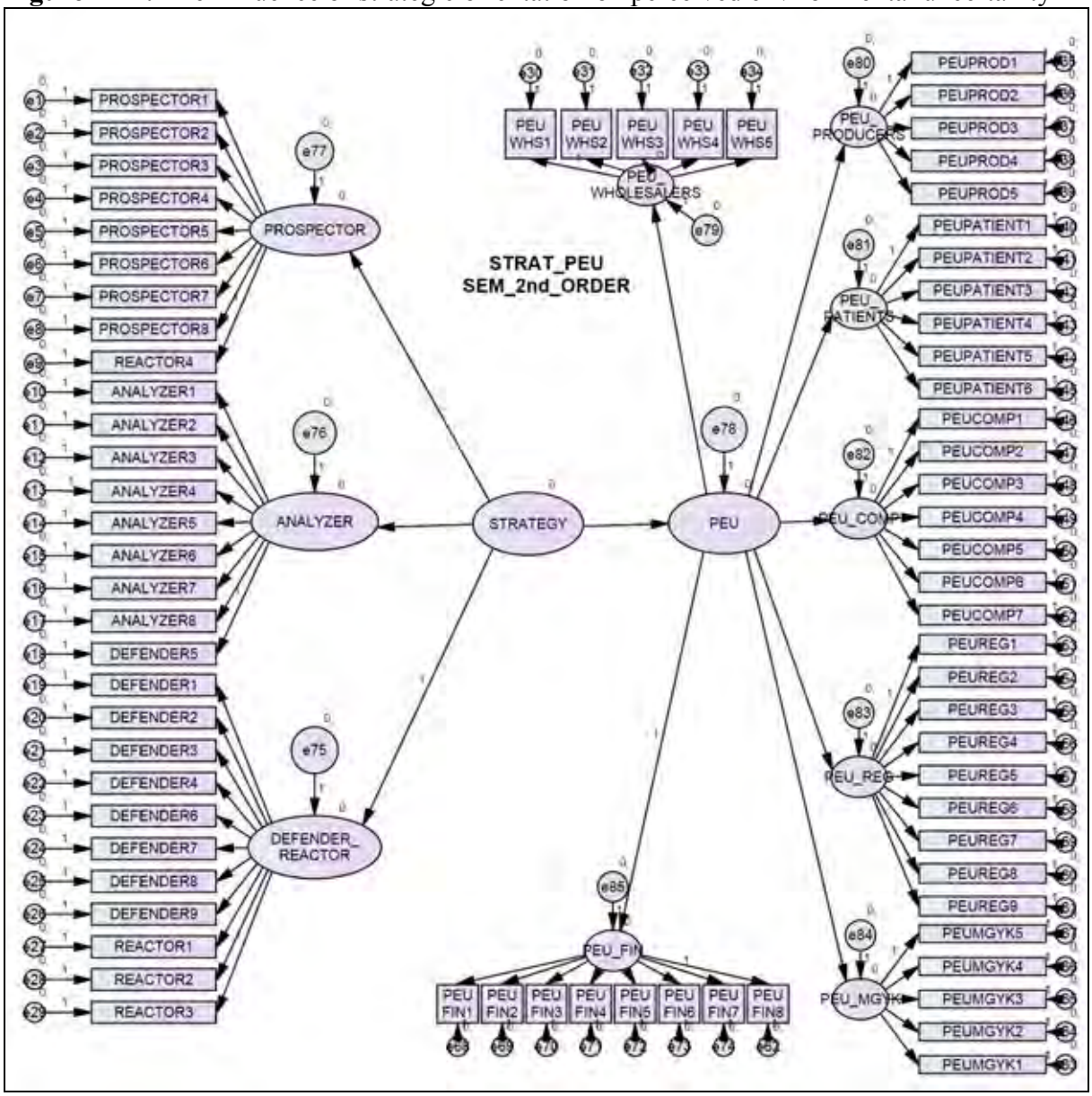
Source: Figure made by the author (AMOS) based on Miles-Snow (1978) and Segev (1987)

Figure XVIII: The effect of M&S's SOs on PEU



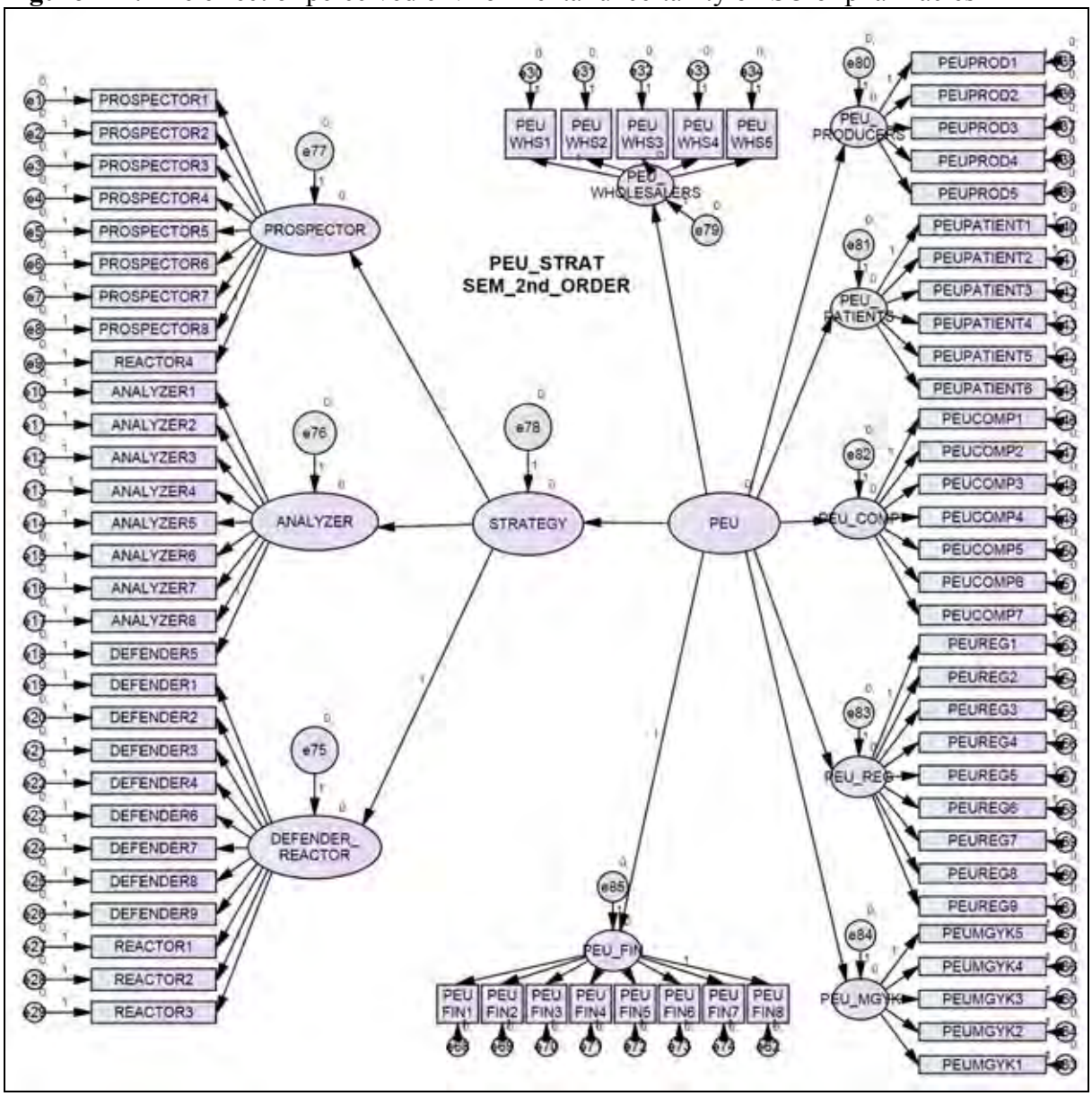
Source: Figure made by the author (AMOS)

Figure XIX: The influence of strategic orientation on perceived environmental uncertainty



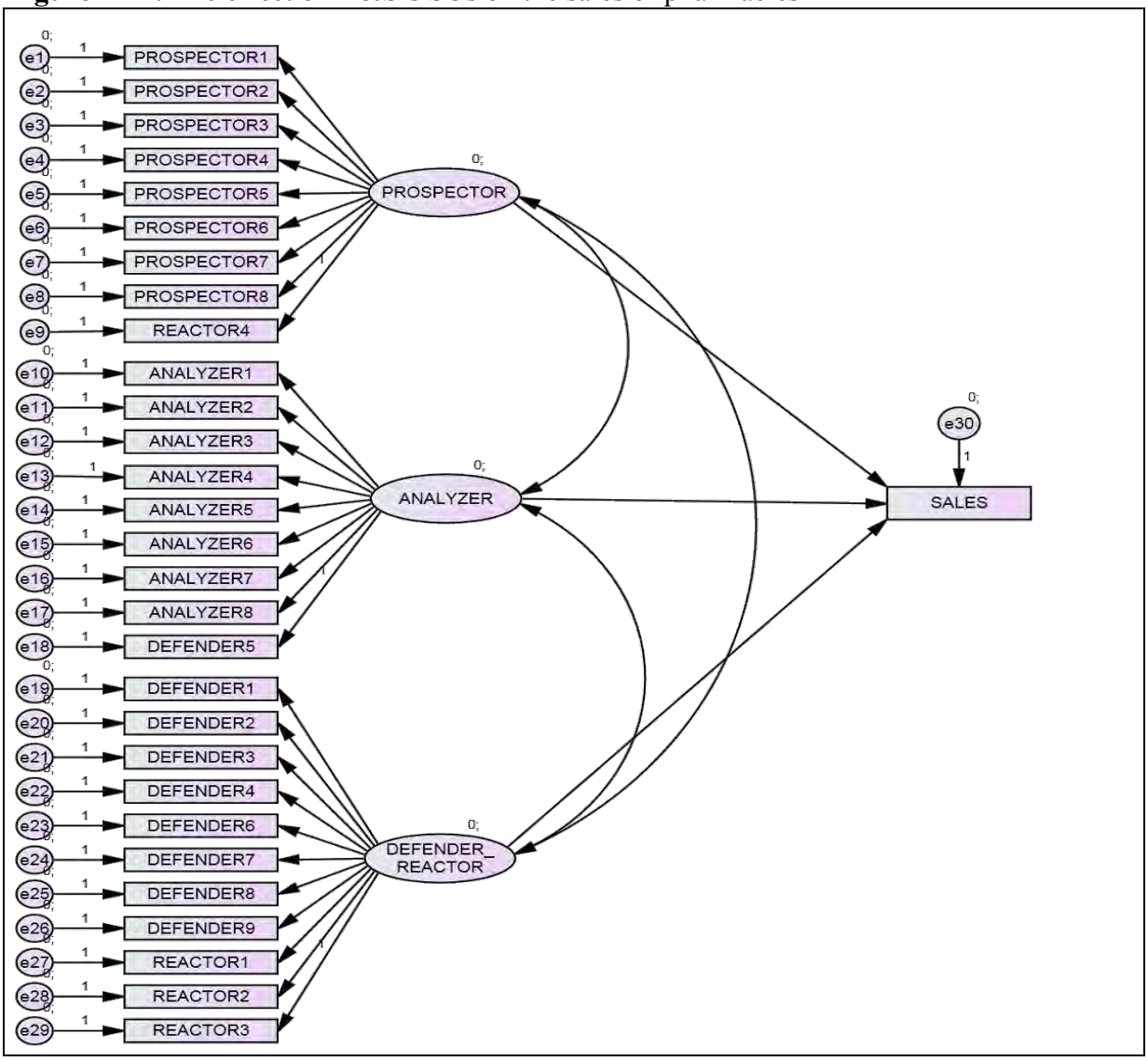
Source: Figure made by the author (SEM)

Figure XX: The effect of perceived environmental uncertainty on SO of pharmacies



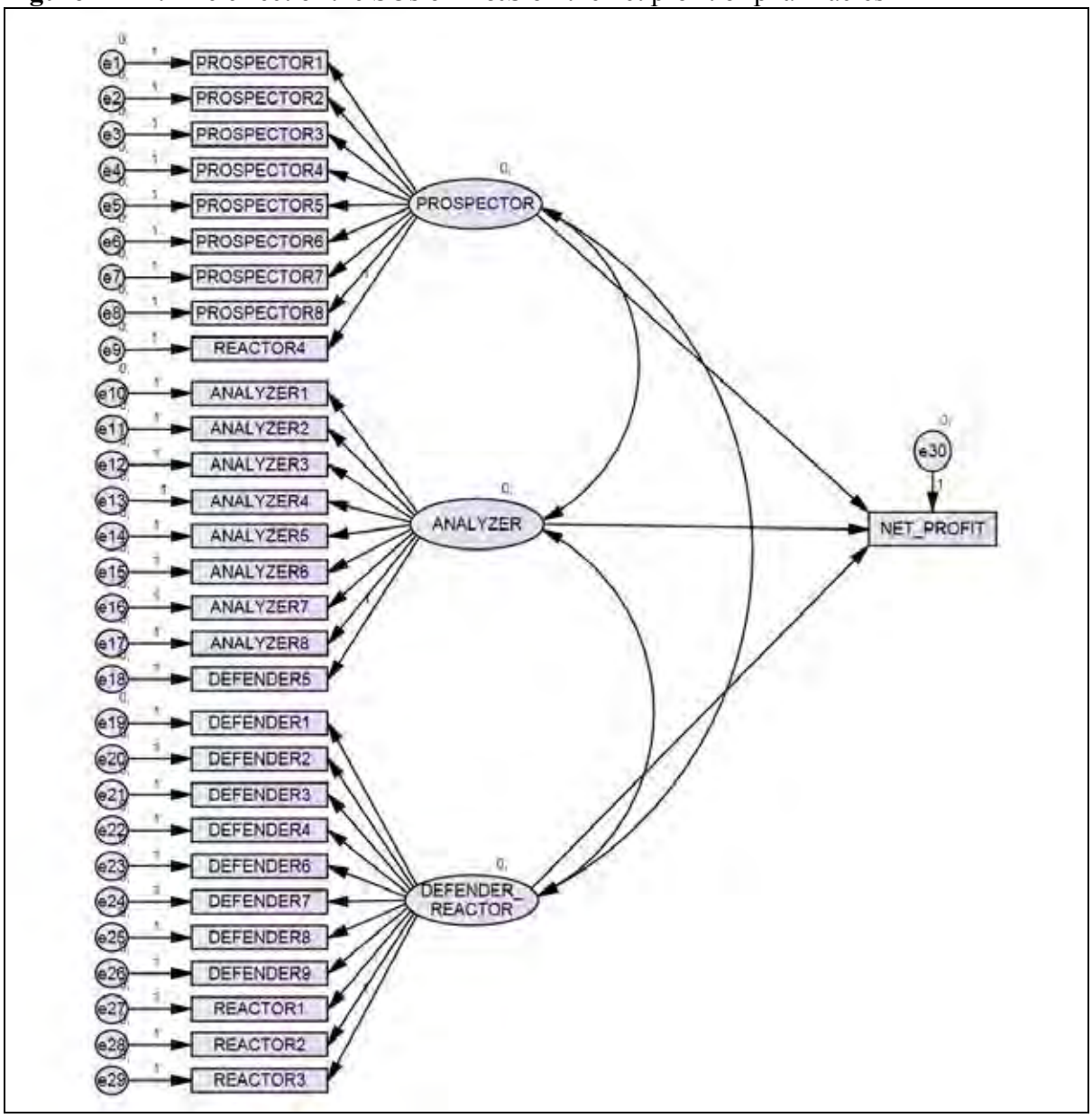
Source: Figure made by the author (SEM)

Figure XXI: The effect of M&S's SOs on the sales of pharmacies



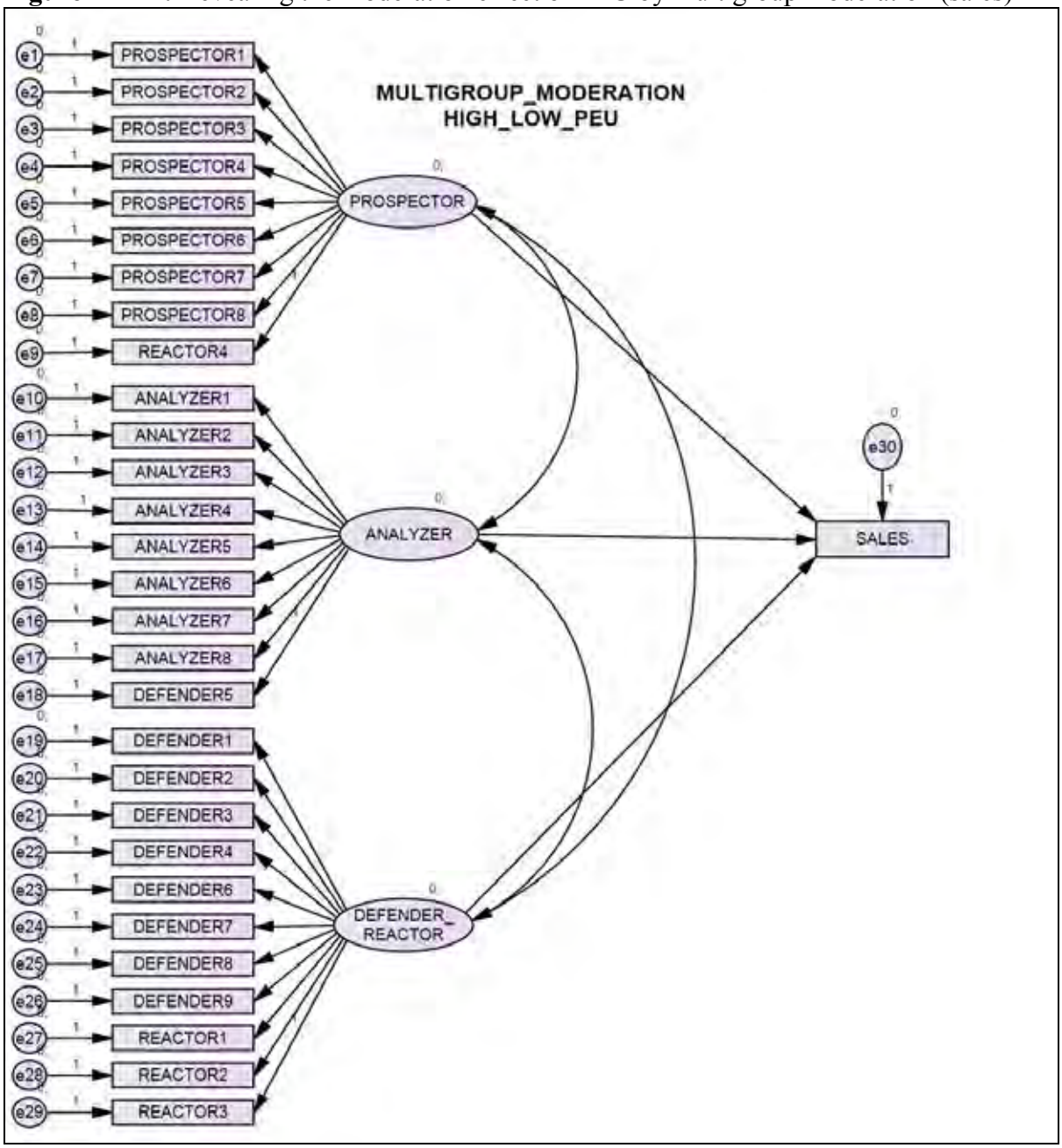
Source: Figure made by the author (AMOS)

Figure XXII: The effect of the SOs of M&S on the net profit of pharmacies



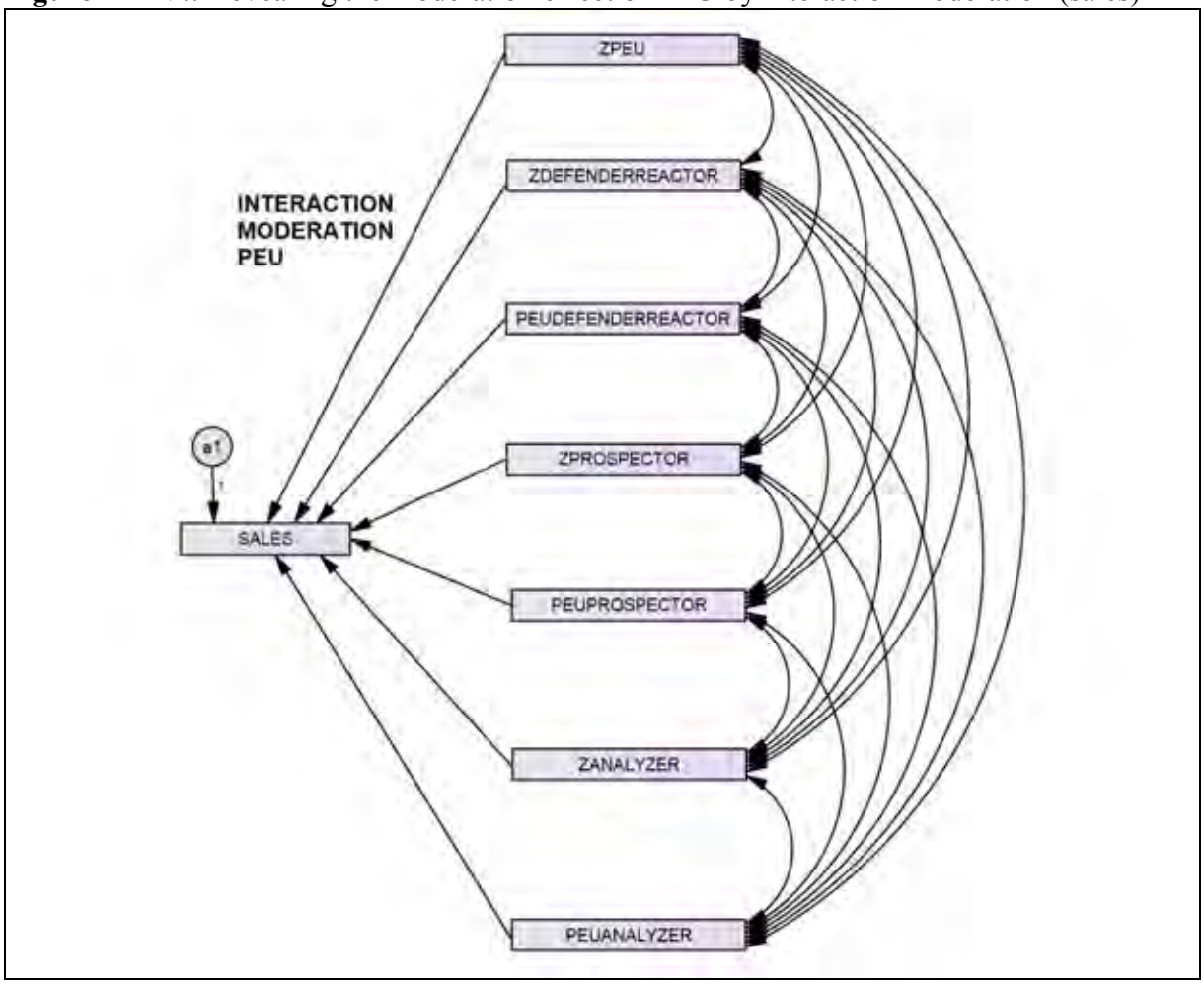
Source: Figure made by the author (AMOS)

Figure XXIII: Revealing the moderation effect of PEU by multigroup moderation (sales)



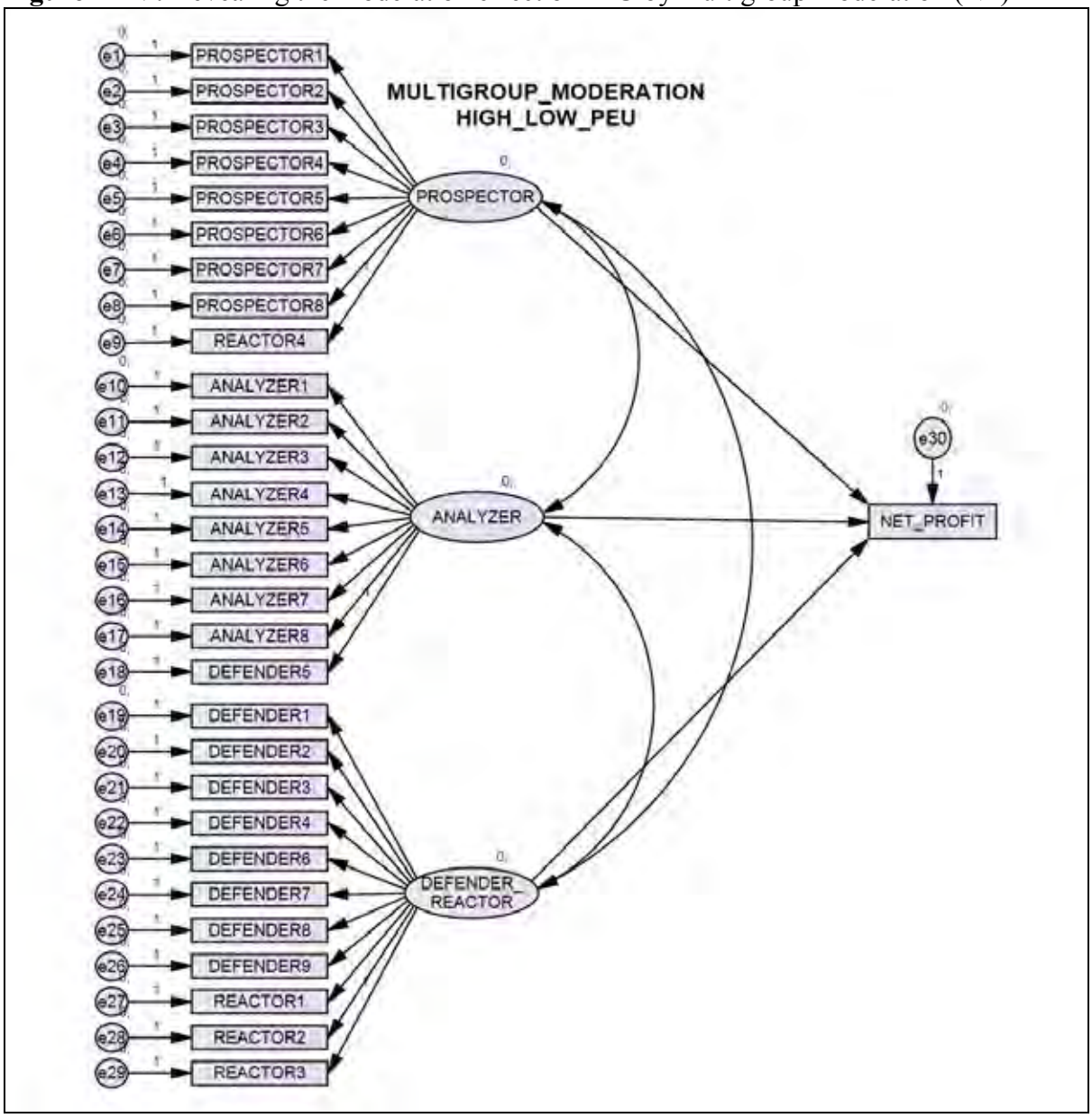
Source: Figure made by the author (AMOS)

Figure XXIV.: Revealing the moderation effect of PEU by interaction moderation (sales)



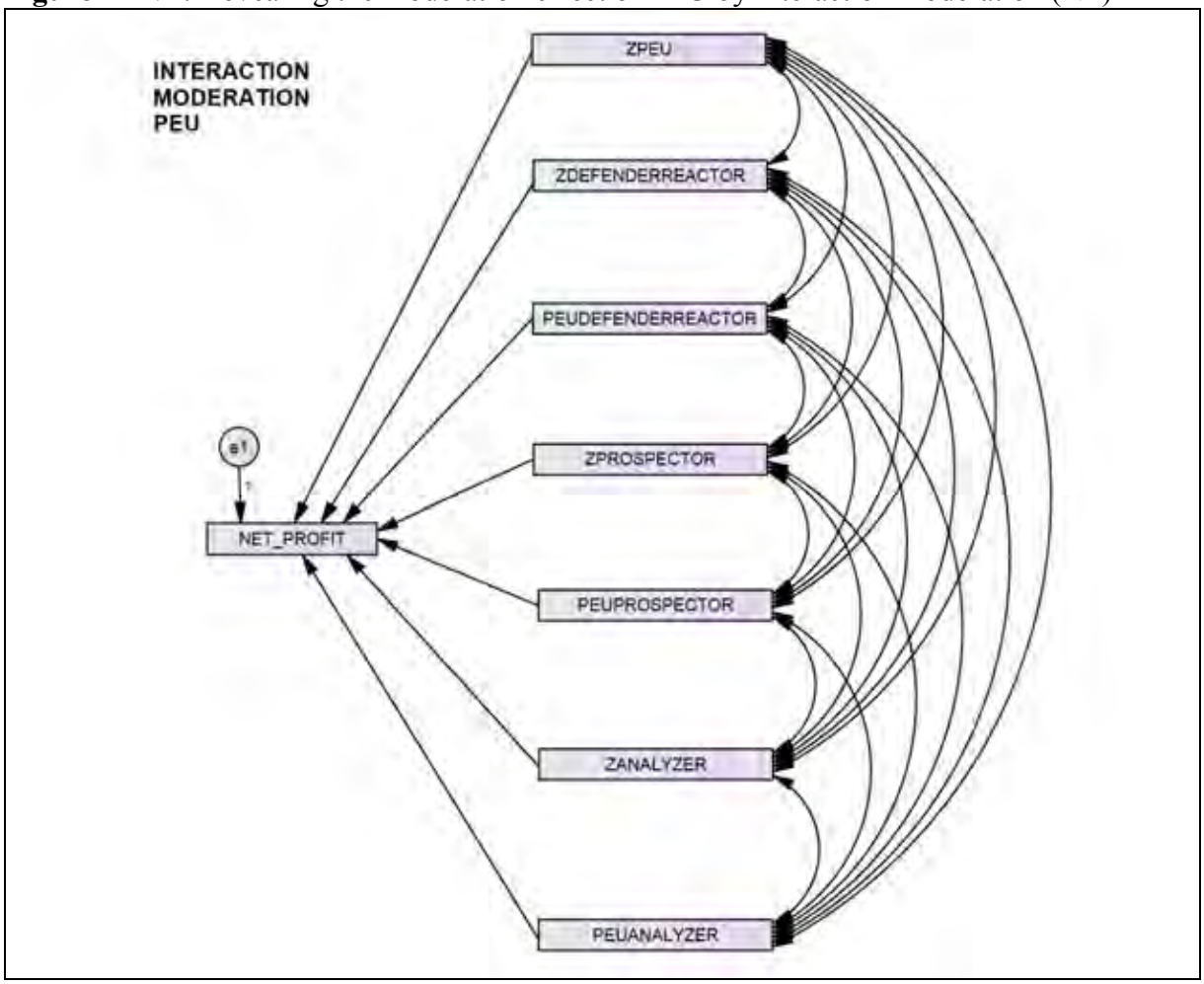
Source: Figure made by the author (SEM)

Figure XXV: Revealing the moderation effect of PEU by multigroup moderation (NP)



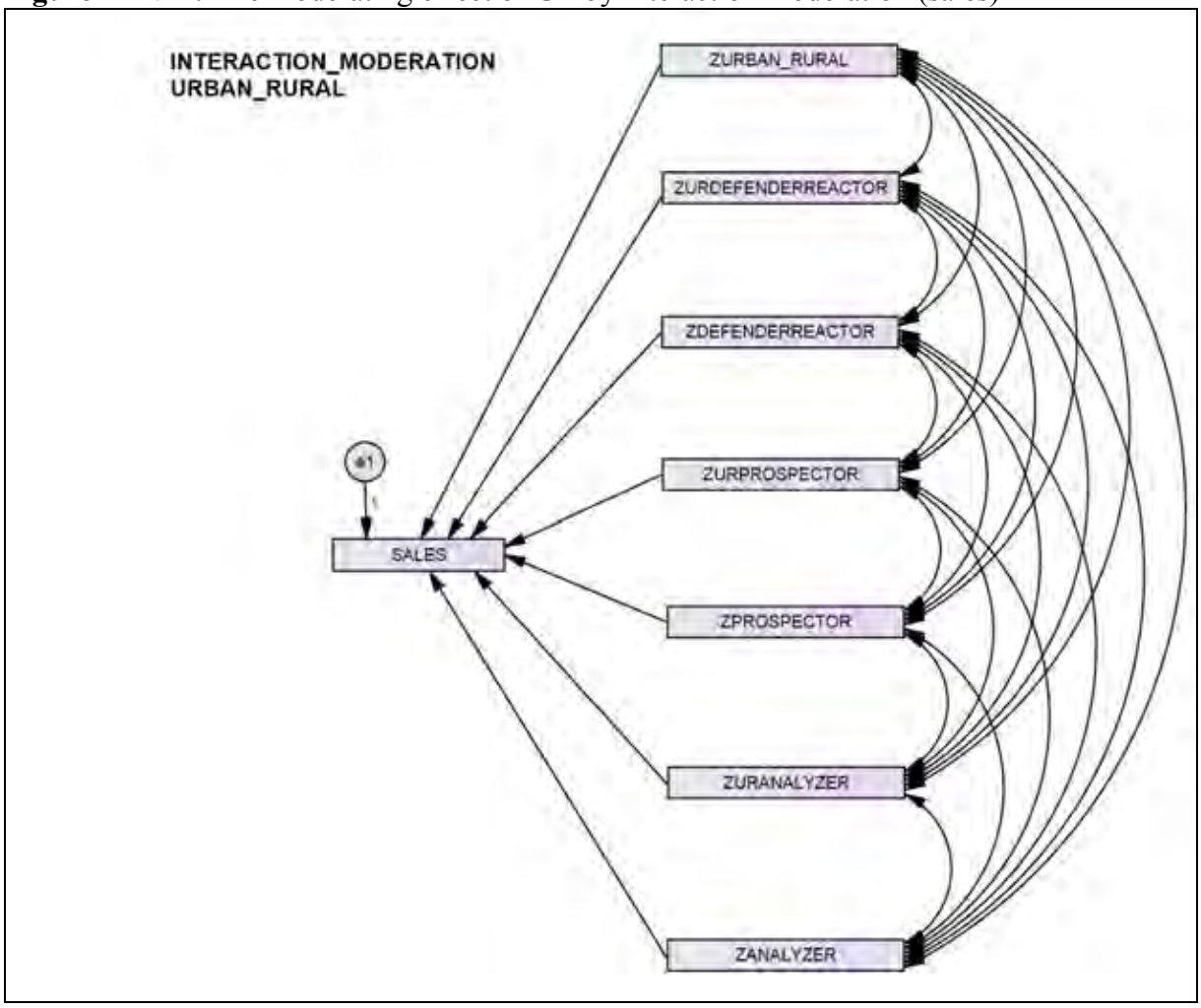
Source: Figure made by the author (AMOS)

Figure XXVI: Revealing the moderation effect of PEU by interaction moderation (NP)



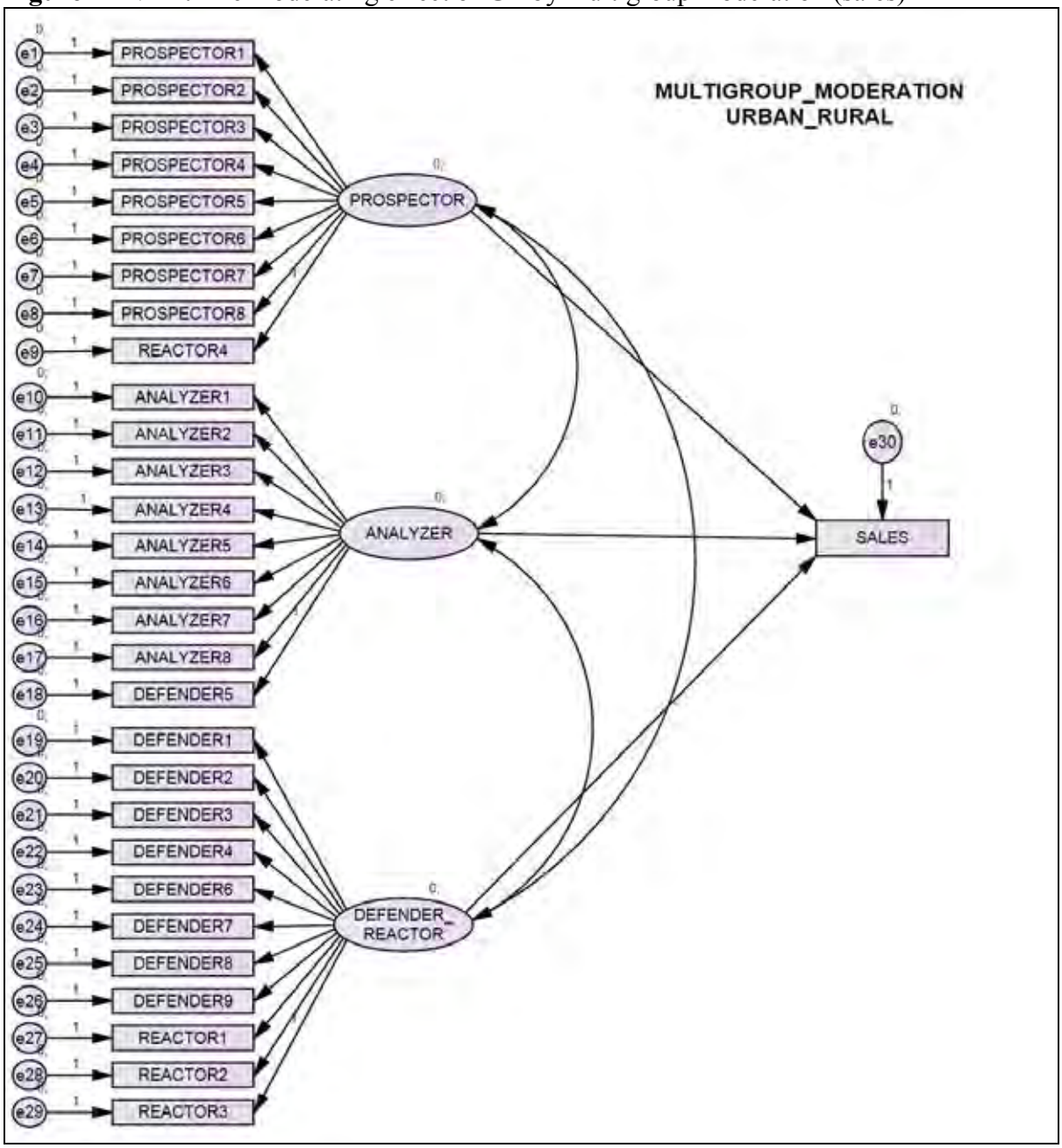
Source: Figure made by the author (AMOS)

Figure XXVII: The moderating effect of GL by interaction moderation (sales)



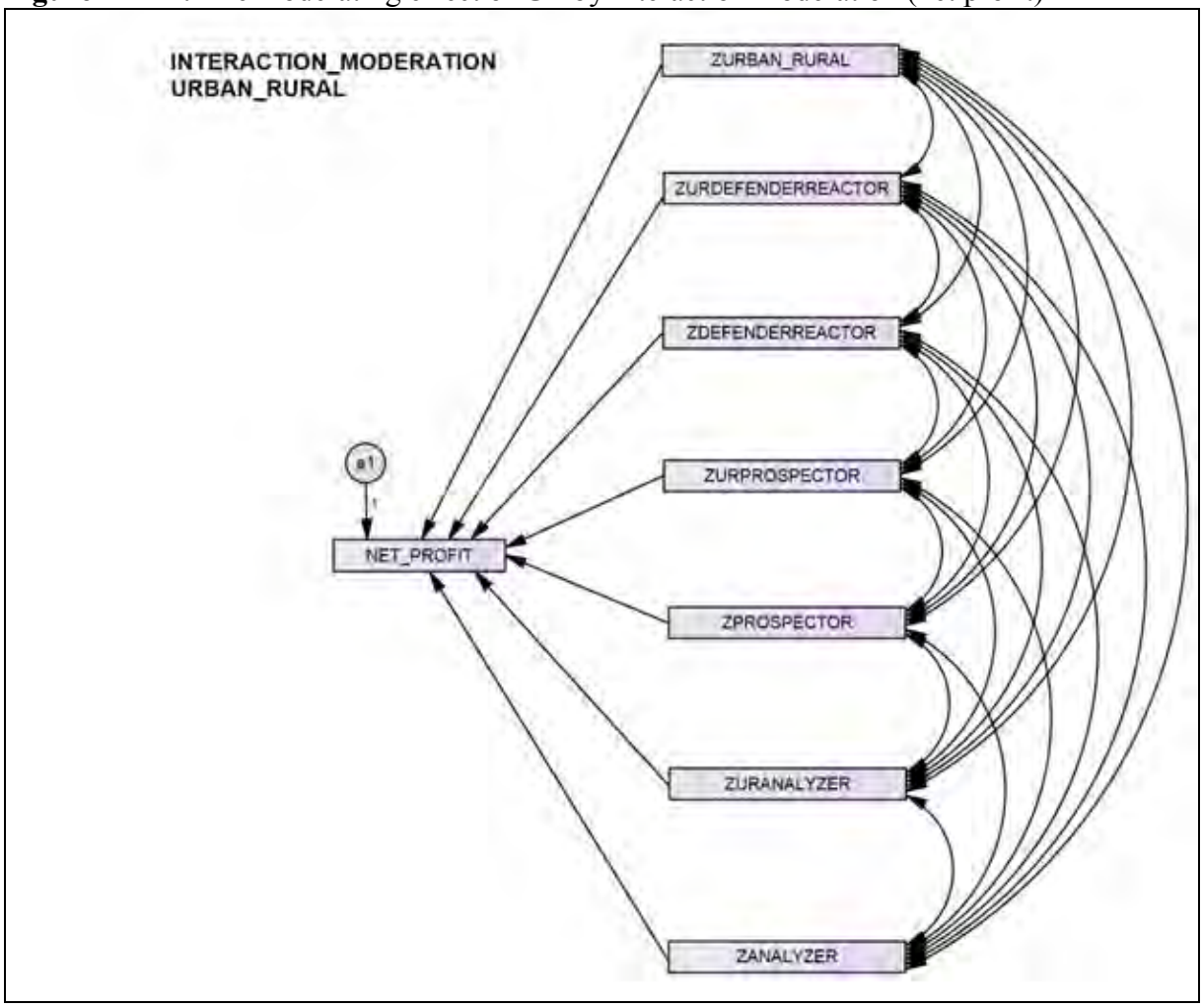
Source: Figure made by the author (AMOS)

Figure XXVIII: The moderating effect of GL by multigroup moderation (sales)



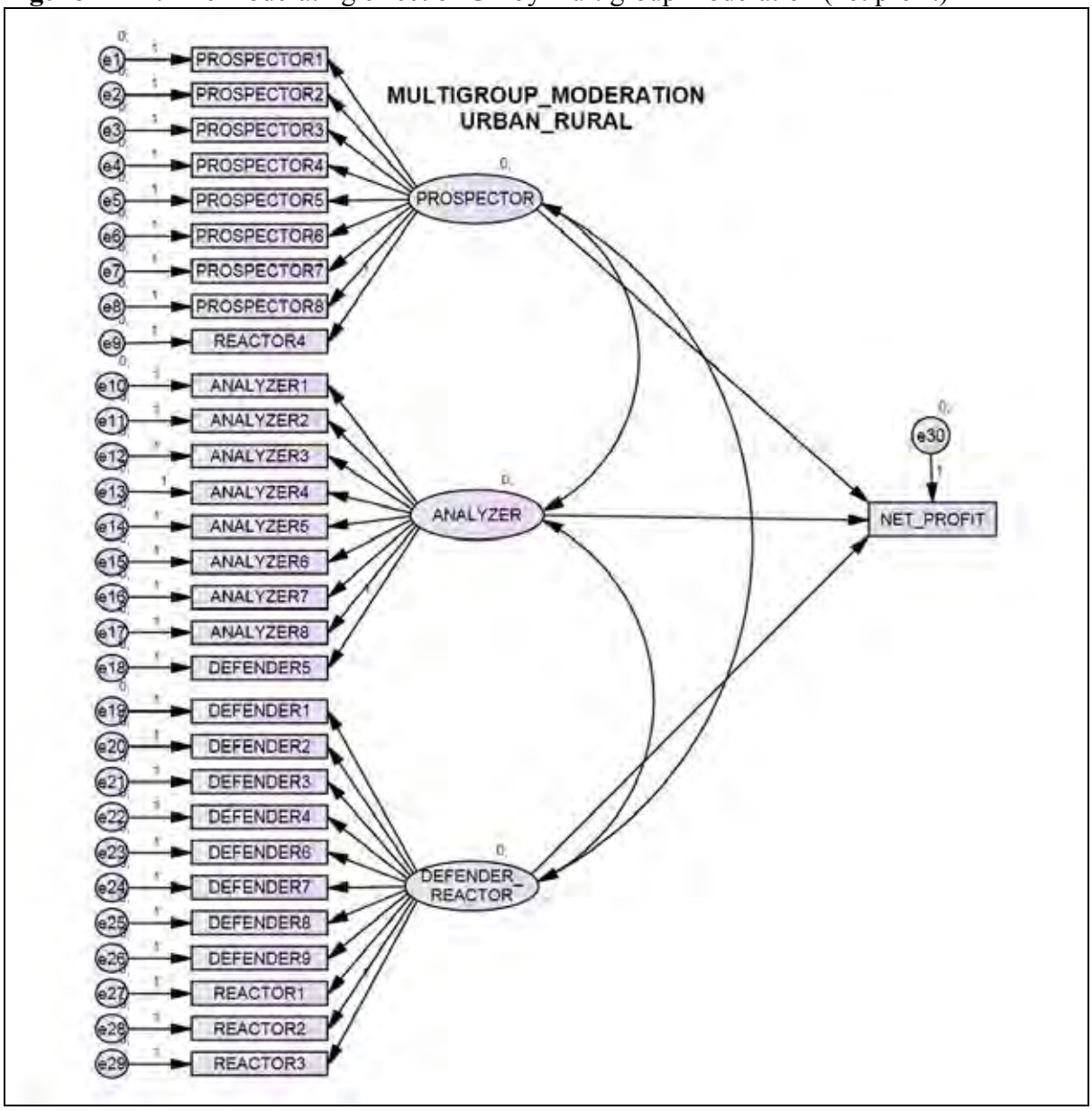
Source: Figure made by the author (AMOS)

Figure XXIX: The moderating effect of GL by interaction moderation (net profit)



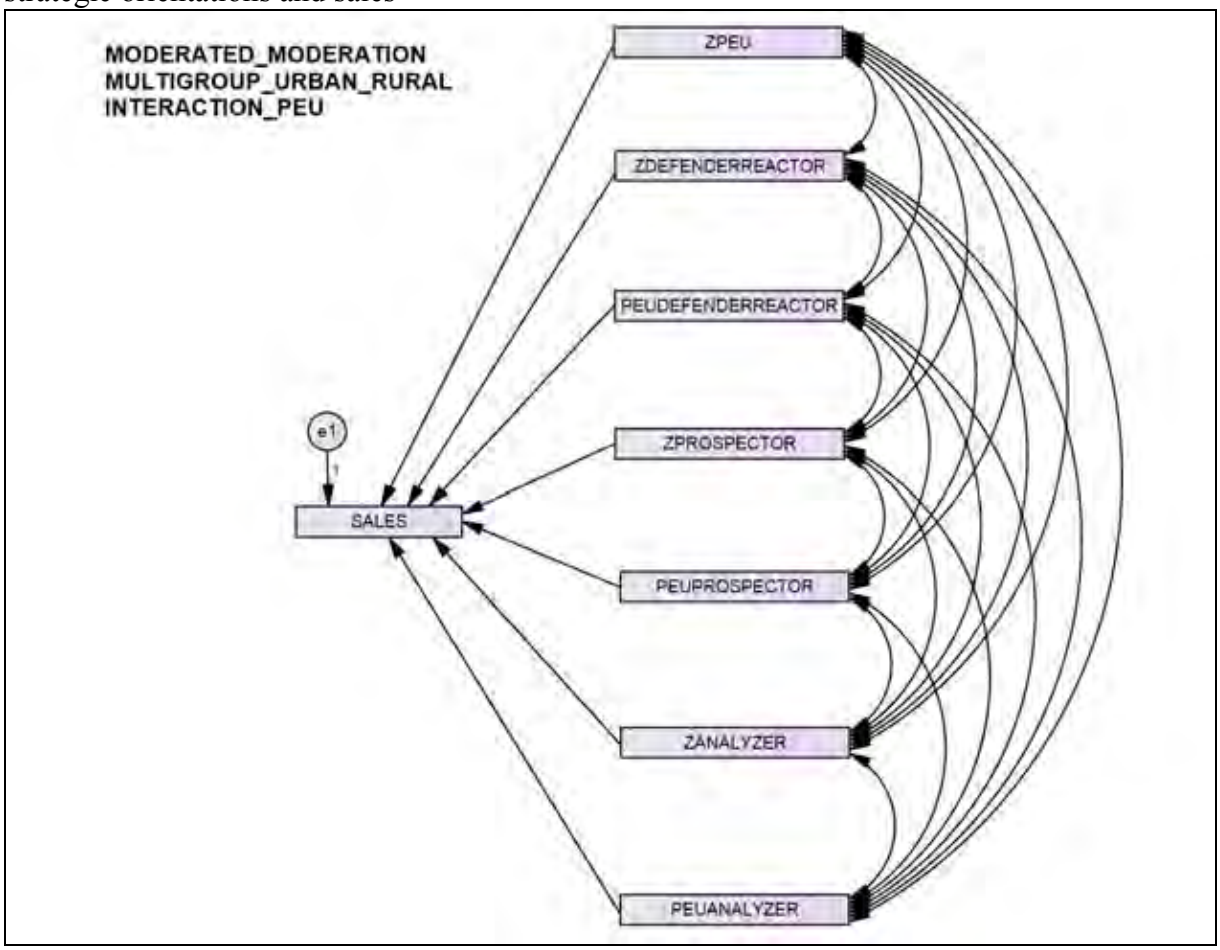
Source: Figure made by the author (SEM)

Figure XXX: The moderating effect of GL by multigroup moderation (net profit)



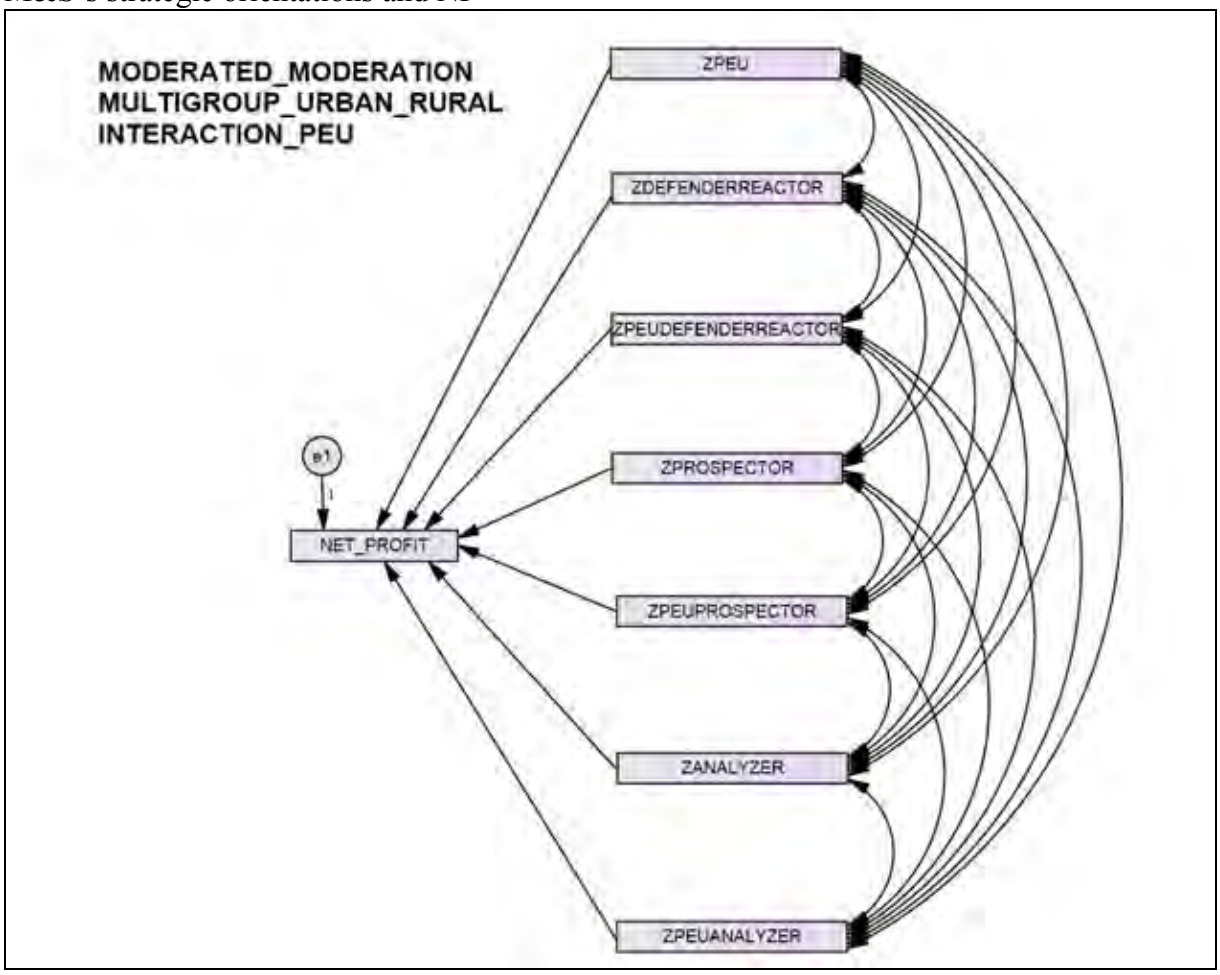
Source: Figure made by the author (AMOS)

Figure XXXI: The combined moderating effect of GL and PEU in the relationship of M&S's strategic orientations and sales



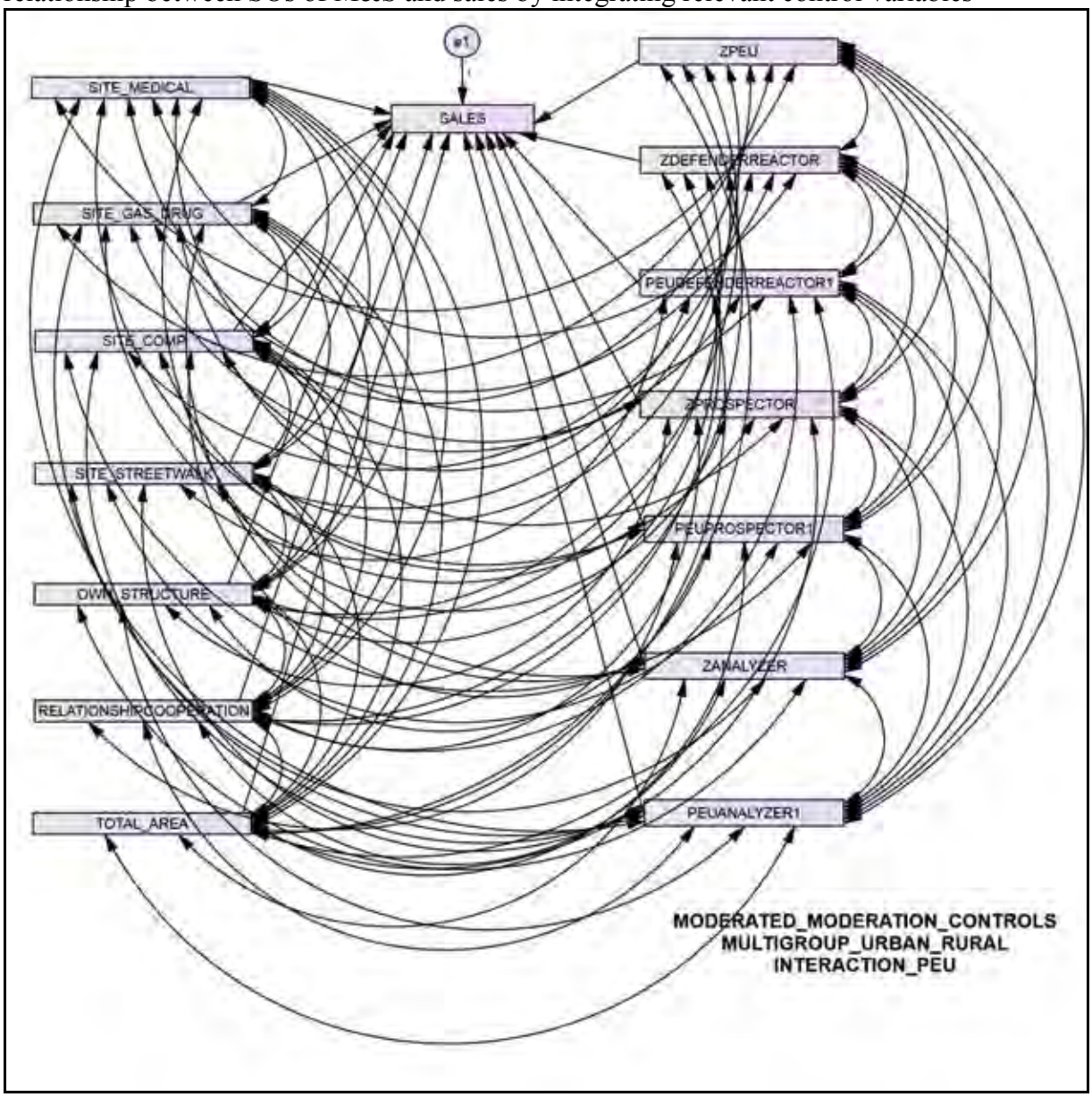
Source: Figure made by the author (AMOS)

Figure XXXII: The combined moderating effect of GL and PEU in the relationship of M&S's strategic orientations and NP



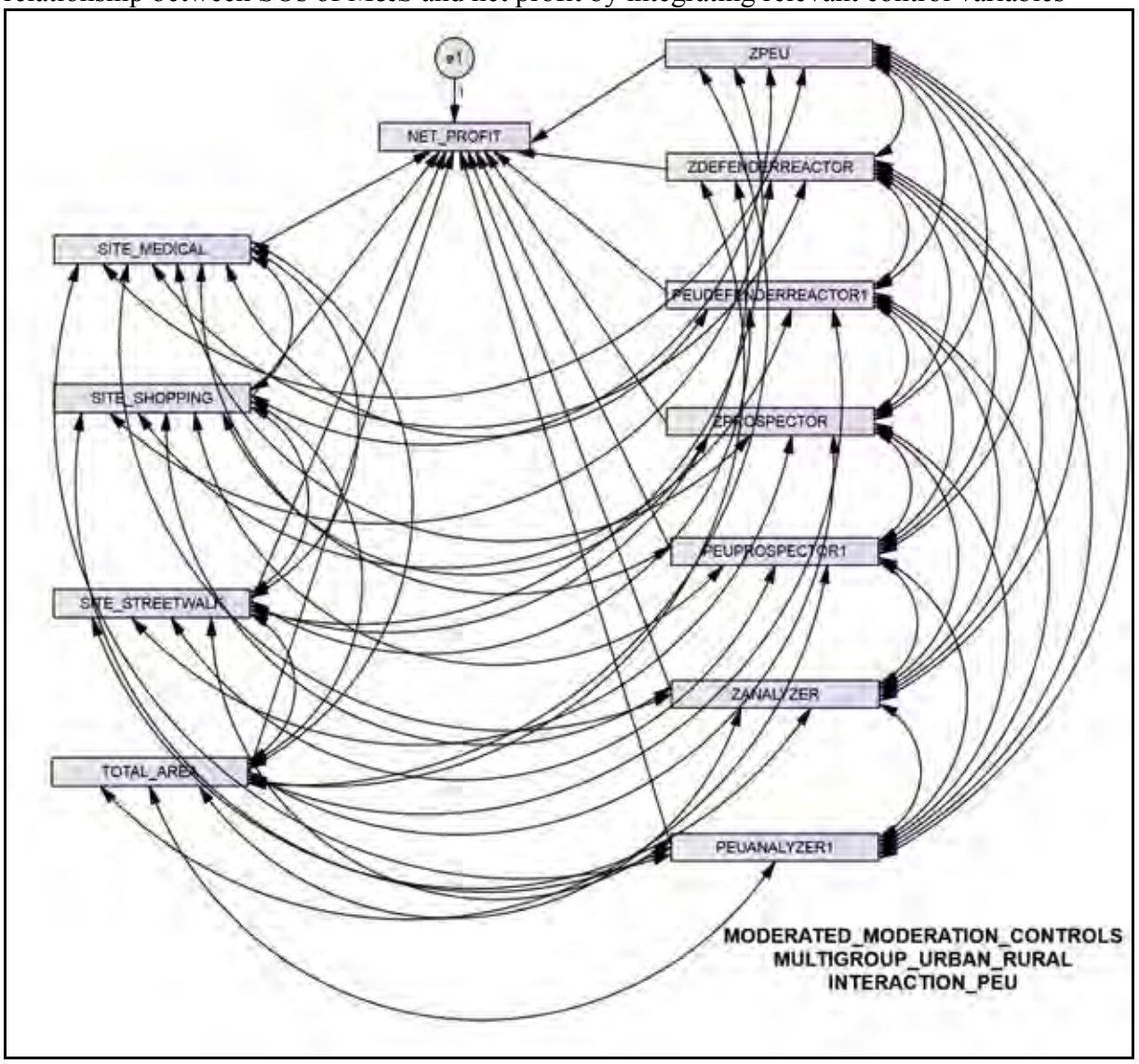
Source: Figure made by the author (AMOS)

Figure XXXIII: Revealing the combined moderating effect of GL and PEU in the relationship between SOs of M&S and sales by integrating relevant control variables



Source: Figure made by the author (AMOS)

Figure XXXIV: Revealing the combined moderating effect of GL and PEU in the relationship between SOs of M&S and net profit by integrating relevant control variables



Source: Figure made by the author (AMOS)

50. Publications of the author in the topic of the doctoral dissertation

Articles published in Hungarian language journals

1. Csepeti Ádám (2014a), A gyógyszertárak gazdálkodásáról – I. rész, *Gyógyszerészi Hírlap*, XXV. Évf., 1. Szám, 16-19. old.

2. Csepeti Ádám (2014b), A gyógyszertárak gazdálkodásáról – II. rész, *Gyógyszerészi Hírlap*, XXV. Évf., 2. Szám, 12-16. old.

3. Csepeti Ádám (2012), A Miles és Snow-féle stratégiai tipológia teljesítményvonatkozásai, *Marketing és Menedzsment*, XLVI. Évf., 3. Szám, 3-21. old.

4. Csepeti Ádám (2011), A Miles és Snow-féle stratégiai tipológia teljesítményvonatkozásai, *Gazdaság és Társadalom,* Különszám, 2011. Március, 140-168. old.

5. Csepeti Ádám (2010), A Miles és Snow-féle stratégiai tipológia kutatási kérdései, *Vezetéstudomány*, XLI. Évf., 11. Szám, November, 15-30 old.

Articles and presentations published in international conferences

1. Strategic Behaviour in the Hungarian Pharmacy Market – Testing the Applicability of the Miles and Snow Strategic Typology in Regulated Industrial Environment, European Marketing Academy (EMAC), Regional Conference, Belgrade, 2012

2. Strategic Orientation and Performance Implications in the Hungarian drug retail sector, European Institute for Advanced Studies in Management, EDEN Doctoral Seminar on Dissertation Writing, ISM University, Vilnius, 2011

3. Research Approaches of the Miles and Snow strategic typology, 6th. International Conference of Young Researchers, University of Szent István, Gödöllő, 2010

Articles and presentations published in Hungarian conferences

1. Stratégiai magatartás a magyarországi gyógyszertárpiacon, Magyar Marketing Szövetség, Marketing Oktatók Klubja 17. országos konferenciája, Pécsi Tudomány Egyetem, Közgazdaságtudományi Kar, Pécs, 2011

2. A Miles és Snow-féle stratégiai tipológia kutatási kérdései, Marketing Oktatók Klubja 16. országos konferenciája, Budapesti Kommunikációs és Üzleti Főiskola, Budapest, 2010

3. A Miles és Snow-féle stratégiai alkalmazkodási tipológia teljesítményvonatkozásai, Hitel, Világ, Stádium Konferencia, Nyugat-Magyarországi Egyetem, Közgazdaságtudományi Kar, Sopron, 2010